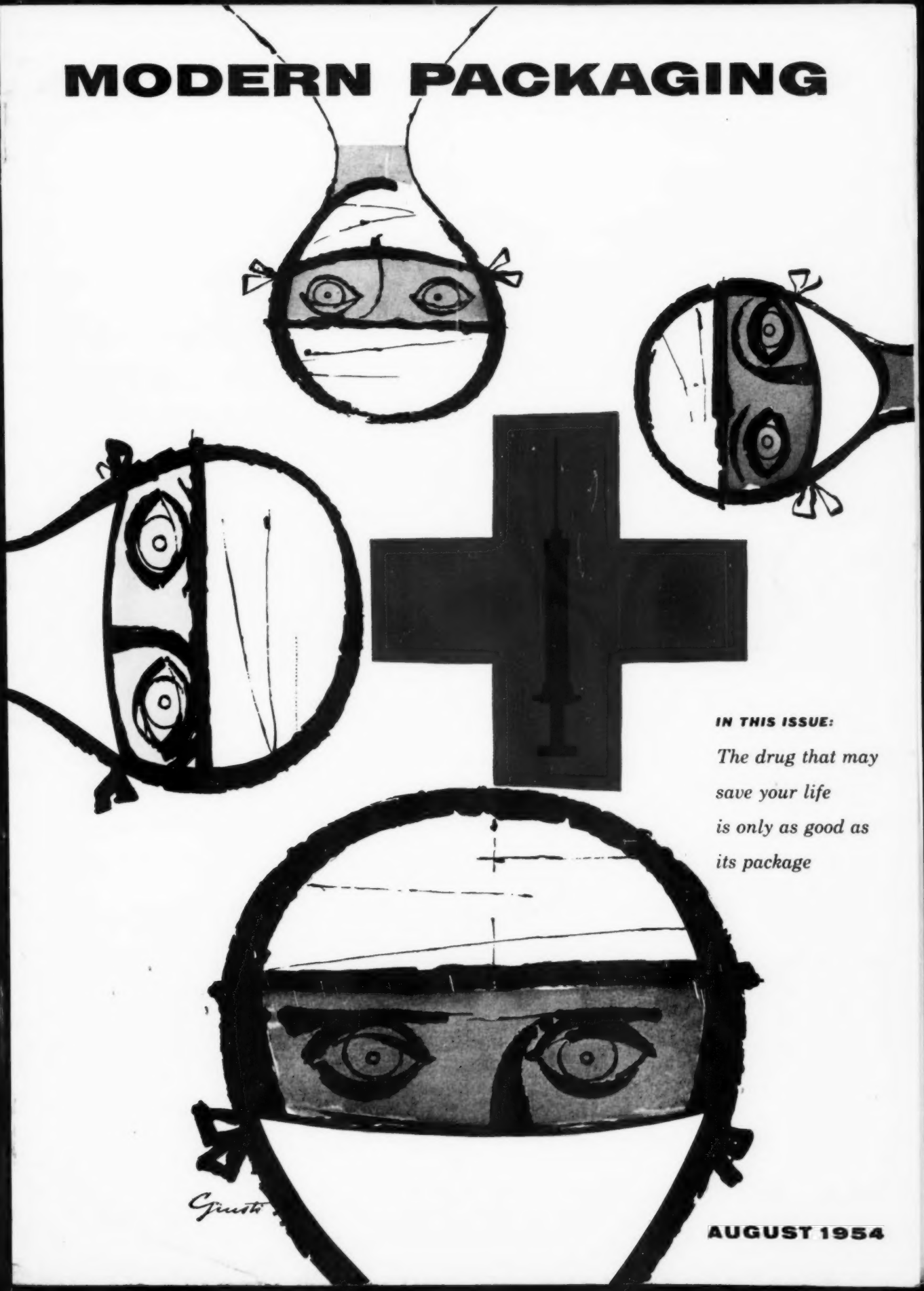
MODERN PACKAGING



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The drug that may save your life is only as good as its package

AUGUST 1954

Enva-Lok*

AN ADVANCED *Resin* SEAL

COMPLETELY *Revolutionizes* ENVELOPE SEALING

NEW **ENVA-LOK** is the first radical change in envelope flap sealing in over 50 years. It is a remoistening *resin* emulsion. It has been developed and successfully introduced by NATIONAL to replace dextrin-type remoistening gums long accepted as standard by envelope makers.

NEW **ENVA-LOK** produces an instant safety seal on all types of envelope stock, including the heretofore difficult rag and kraft stock which often required extra unsightly taping to insure safe delivery. The paper tears before the seal yields, even high quality bond or heavy kraft.

NEW **ENVA-LOK** does not cause envelopes to stick together during manufacture, storage or addressing and stuffing in humid weather. This eliminates waste. It does not cause flaps to curl. This permits the envelopes to lie flat. They stack tighter. They speed automatic addressing and stuffing; and permit better printing and engraving.

NEW **ENVA-LOK** deposits a thin, clear film. It makes a better looking, quality envelope. Millions of envelopes are being made with ENVA-LOK.

• • •

This successful remoistening resin emulsion has great potential use in other fields such as labeling, sealing tape, decalcomania, etc. Write for samples and technical data.

*Patent applied for.

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ADHESIVES

NATIONAL STARCH PRODUCTS INC. (Resin Division)
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GAIR can help

MERCHANDISE YOUR PRODUCT

with sales-appeal DISPLAY

With Gair display stands working for you in retail outlets, it's like having a company salesman in every store. The mass presentation of your product commands the attention of passing shoppers . . . the constant repetition of your sales message stimulates the urge to buy.

Do you want to introduce a new product? Pep up the sales of a standard item? Push a combination deal? Gair display stands will help.

Designed for long and useful promotional life, these stands are sturdily constructed of corrugated board and are attractively printed. For greatest visual impact, you can have your sales story printed in more than one color on a contrasting background color of your choice.

Check with the Gair plant nearest you to learn which of the many styles will make a perfect setting for your product. Learn, too, how Gair's assured supply source, design ability and delivery service help give you the best in corrugated display aids.

CAMBRIDGE, MASS. • CLEVELAND, OHIO • HOLYOKE, MASS. • MARTINSVILLE, VA. • NO. TONAWANDA, N. Y.
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GAIR

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FOLDING CARTONS
PAPERBOARD

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MODERN PACKAGING

August 1954, Vol. 27, No. 12

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*Reg. U.S. Pat. Office

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FAST-SELLING Geritol and R.D.X. are packaged on Jones high speed cartoners to keep up with the wide demand.

The entire output of both products is handled by three Jones cartoners – chosen for ready flexibility combined with high capacity. Each cartoner is quickly, easily adjustable to the full range of 10 carton sizes – in a minimum of "downtime."

Each carton contains leaflet, reply card, and bottle (ranging from 40-tablet size to 24-oz. liquid size).

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Machines feed and open cartons, tuck bottom flaps, convey cartons past manual loading stations where bottle, leaflet, and reply card are inserted. Machines then tuck top flaps and deliver loaded cartons.

THE JONES FULLY AUTOMATIC CARTONER

Leaflets and reply cards are fed from magazine into buckets. Bottles, received automatically, are gently placed over leaflets and cards. Machine feeds and opens cartons, inserts multiple load, tucks top and bottom flaps, and discharges loaded cartons. Glue strip for bottom flaps when required.

The complete flexibility and dependable high speed performance of Jones Cartoners are cost-cutters for widely diversified cartoning operations. Describe your cartoning needs to R. A. Jones & Company, Inc. . . . by 'phone or letter today.

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MODERN PACKAGING is regularly indexed in *Industrial Arts Index*.

Higher opportunity

THIS IS A GOOD TIME to speak up editorially about something which needs and deserves the active support of every company to which packaging is important.

Starting its third year in this uncharted field, Michigan State College will present this September the most complete course in packaging ever offered to college undergraduates. In fact, MSC is still the only college offering a major in packaging and a degree in Packaging Technology. Around 30 students will be enrolled in the course this fall—one for his third and senior year; 10 for the second year.

Although it works closely with an advisory committee of industry people to make certain that its students get a thorough and well-balanced indoctrination in packaging, MSC seeks in this course to turn out, first, well-rounded college men and, second, packaging men—not specialists, not experts, but men prepared to become specialists and experts.

In their own best interests, packaging companies must see that the Michigan State course has every help and facility that they can provide. It must be talked about and written about, both to attract promising students and to arouse similar activity in other universities. What has been started at Michigan State must eventually spread to every large university in the country. Instead of 30 students with packaging degrees, the colleges should turn out hundreds every year.

For large companies are looking more and more to the ranks of packaging executives for their top-management personnel. That fact was significantly commented upon at the recent AMA National Packaging Conference by J. Collins Coffee, a partner in Management Development Associates.

"We are becoming aware," said Mr. Coffee, "of the breadth of experience in a packaging career. The packaging specialist must know marketing, manufacturing, engineering, purchasing, plus the basic psychology of what makes people buy. Top management in mass-distribution industries will come increasingly from the pool of men who have had packaging experience."

And the college graduate who has trained from the beginning for that sort of opportunity will not be overlooked.

The Editors

Dobeckmun creates...

A sheet package for Springmaid that's blanketing America

Here's a success story for you! Dobeckmun designed and printed a colorful transparent cellophane wrap for Springmaid Sheets that shouts "Quality sheets!" to women everywhere. Happy combination of Springmaid quality and Dobeckmun ingenuity helped move Springmaid from thirteenth place in the sheet field to second, in just three short years! Dobeckmun's creativeness can help *your* product, too. Get in touch with the Dobeckmun packaging specialist nearest you . . . today.

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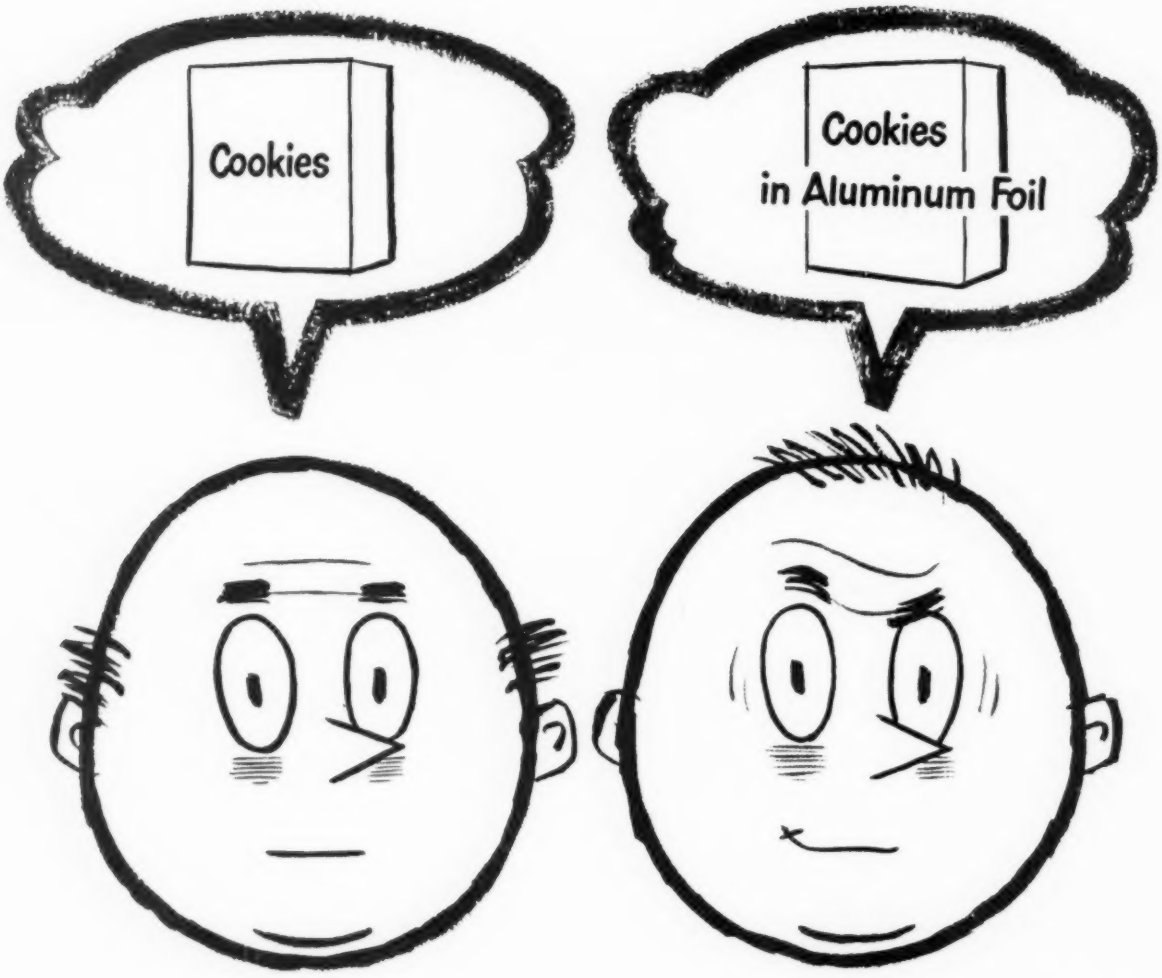


Who'll sell the most cookies?

The man on the right . . . naturally! Here's why:

An aluminum foil package provides a combination of *competitive advantages* no other packaging material can match! Among these advantages—demanded by more and more progressive food processors—are:

Unsurpassed Sales Appeal—Sparkling aluminum foil makes your package a standout on the shelf. It makes your product more desirable because it reflects the quality it protects!

Flavor Protection—Non-porous foil seals in flavor. Keeps out damaging moisture and air. Imparts no flavor. Prolongs shelf life. Permits distribution over greater distances—thus helps you develop profitable new markets.

Production Versatility—Foil is pliable, easy to handle, easy to print on. Takes economical, reliable heat seal. Can be printed, colored, coated, embossed, combined with other materials. Superior cold transfer characteristics for frozen foods.

We don't make packages, but . . .

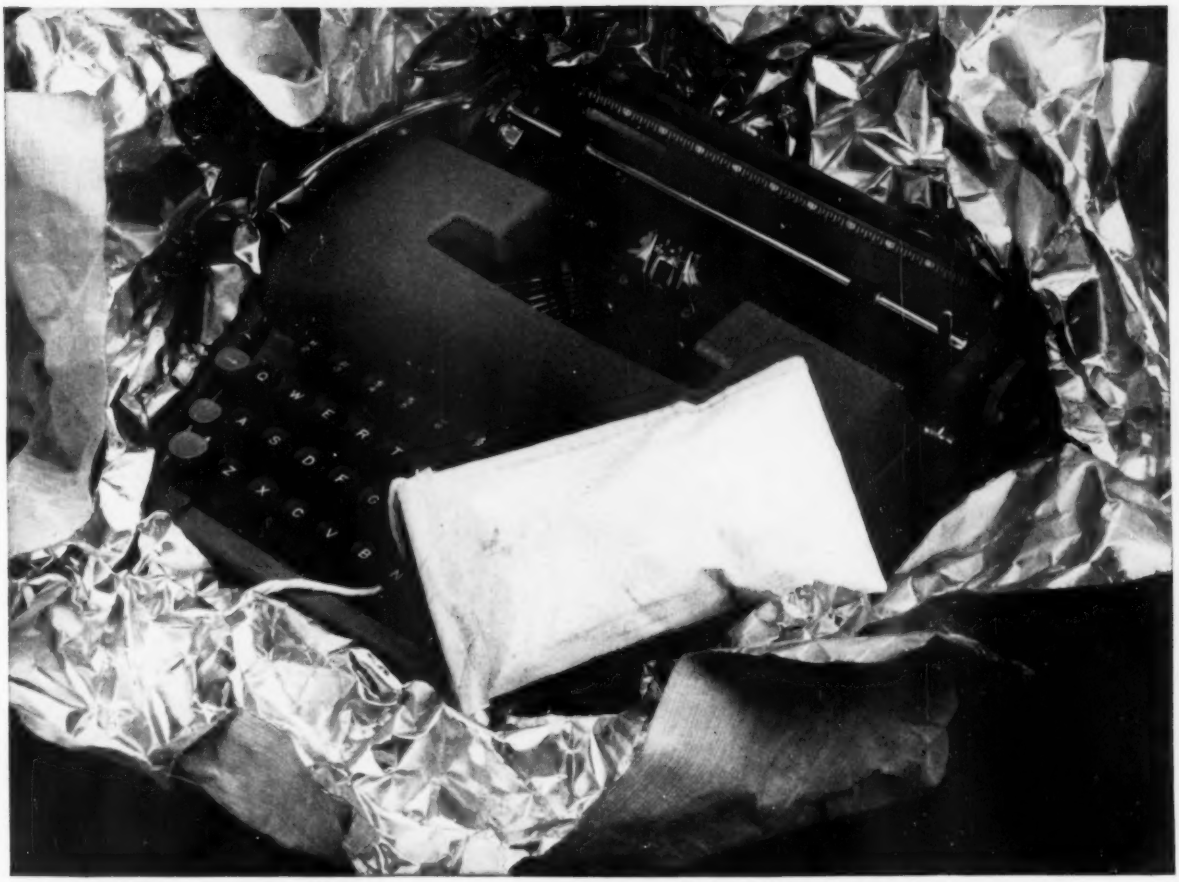
There are many leading converters eager and qualified to tackle your packaging problem with you. These converters rely on Kaiser Aluminum as a major supplier because we are an integrated operation, producing foil of unsurpassed quality in a wide range of specifications. Our Engineering and Development Division is available to work closely with converters.

For names of leading converters contact the Kaiser Aluminum sales offices listed in your telephone directory. Or write Kaiser Aluminum & Chemical Sales, Inc., *General Sales Office*, Palmolive Bldg., Chicago 11, Ill.; *Executive Office*, Kaiser Bldg., Oakland 12, Calif.

Kaiser Aluminum setting the pace—in growth, quality and service

Another new development using

B. F. Goodrich Chemical *raw materials*



B. F. Goodrich Chemical Company does not manufacture this desiccant bag. We supply the Geon latex only.

"Breathing" Bag Sops Up Moisture

—cuts shipping damage!

Shipments of tools, motors and clothing overseas or to humid climates risk damage by moisture or mildew. Pictured here is a new type desiccant bag which "breathes" and does a superb job of sopping up damaging moisture.

Unusual feature of this new bag is the non-woven fabric, made of random cotton fibers with liquid Geon vinyl latex as a binder saturant.

Made into bags to carry the desiccant, this fabric has exceptionally high tensile strength and good tear resistance. Yet its porosity permits moisture inside the airtight container to be adsorbed easily on the desiccant. And the bag can be used over and over merely by heating to drive out the moisture.

Geon vinyl latices have many applications—such as providing a water-proof, grease-resistant coating to paper and boxboard; leather finishing; pigment binding and fabric sizing.

Perhaps a Geon material can help you improve or develop more saleable products—where resistance to heat and cold, moisture, abrasion, oil, grease and many chemicals is required. For technical advice, please write Dept. GL-8, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio, Cable address: Goodchemco. In Canada: Kitchener, Ontario.

GEON RESINS • GOOD-RITE PLASTICIZERS . . . the ideal team to make products easier, better and more saleable

GEON polyvinyl materials • HYCAR American rubber • GOOD-RITE chemicals and plasticizers • HARMON colors

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by Riegel

FAMOUS WELCH CANDY BARS USE SPECIAL RIEGEL BAR-LINER GLASSINE . . . DEVELOPED TO RUN AT HIGH SPEEDS ON CANDY PACKAGING MACHINES.

More than 600 Riegel Papers are now proving their value for many of the nation's best-selling brands. It is the greatest variety of packaging papers available from any one source.

Somewhere among this wide selection you may find a better or more economical paper to protect your product. If we don't have just what you want, we can usually "tailor-make" a new paper to your specifications.

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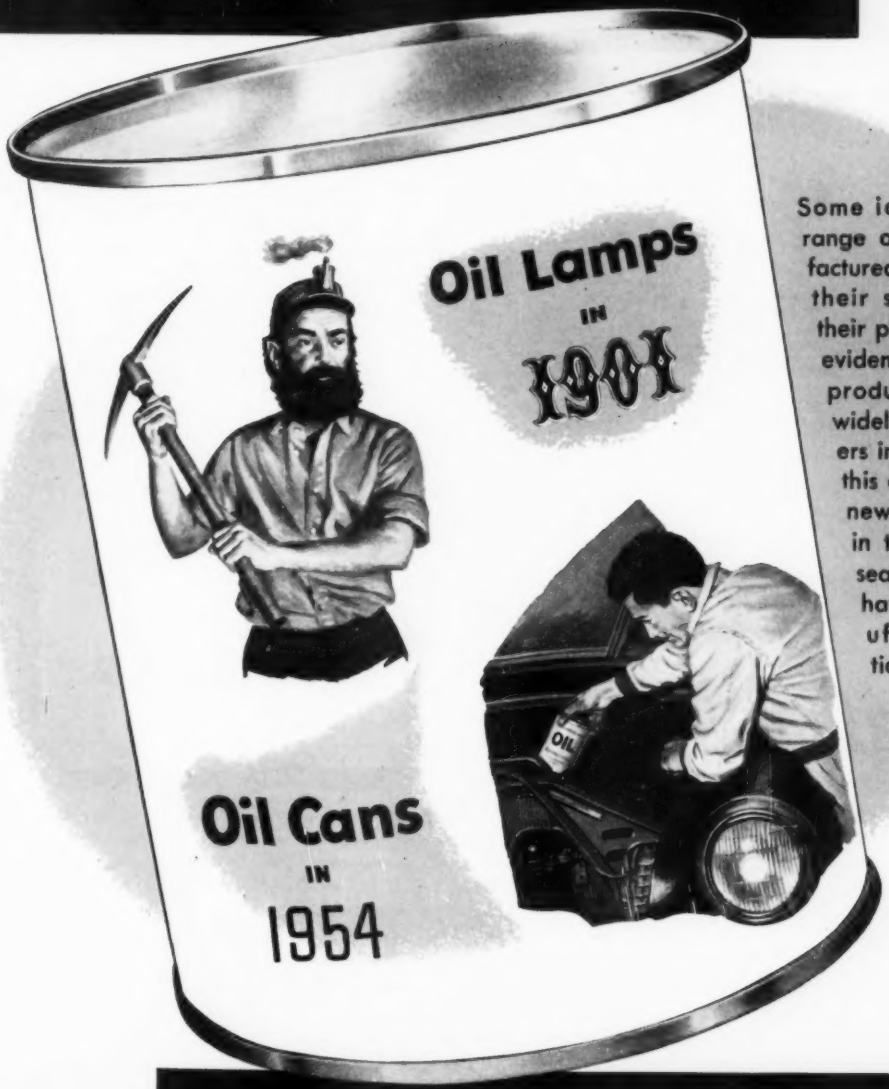
GLASSINES AND GREASEPROOFS

Plain • Waxed • Printed • Lacquer-Coated • Laminated

NATIONAL CAN



Some idea of the wide range of products manufactured by National Can, their subsidiaries and their plant acquisitions is evidenced by these two products. Oil lamps — widely used by coal miners in the early part of this century... and the newest developments in thermoplastic side-seam motor oil cans have both been manufactured by National Can facilities.

NC

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Plants At: BALTIMORE, MD. • CHICAGO, ILL. • MASPETH, N.Y.
CLEVELAND, OHIO • HAMILTON, OHIO and WARREN, OHIO

50 Packers at Belknap Hardware can't be wrong about

International BOXER

Men on the job at Belknap Hardware and Manufacturing Company in Louisville, Kentucky, add another impressive testimonial to low cost packaging. Less than two years ago, this prominent hardware supplier changed to closing cartons with International's BOXER.

Like many companies faced with small carton closing problems, Belknap Hardware reports faster, cleaner and neater carton closing than ever before—but let Mr. Charles A. Gage, Vice President of this firm, say it in his own words:

"We have about fifty packers using your staplers, and they are practically unanimous in stating they much prefer this method to the old one, because it's faster, cleaner and neater than our former method."

BOXER closes most boxes, top and bottom in 20 seconds.
BOXER meets all shipping regulation requirements.
BOXER saves space—cartons may be used as needed.
BOXER saves manpower—frees men for other work.
BOXER closes cleanly—there's no mess, no fuss.

Men on the packing lines ought to know, and the 50 packers at Belknap Hardware voice the opinions of BOXER users everywhere. From a management standpoint, Mr. Gage has this to say:

"The savings in speed of packing, plus better morale among the force, have proved to us that it (the BOXER) is the best method of closing cartons we have yet found."

Investigate now. The BOXER may fit into your packaging problem. Ask for Bulletin B/101.

Package for Profit . . . use International Staples for faster, finer closures.

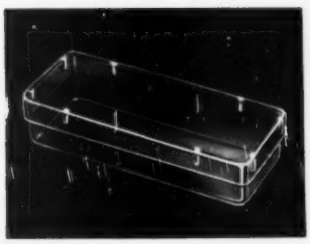
the Royal Family of Packaging
International Staple & Machine Company
ISM
International Staplers
806 East Herrin Street, Herrin, Illinois

NO MORE SALES THREADACHES...

WITH *Tri-State Rigid Plastic Boxes*

Crystal-clear containers that put "showcase" appeal into its thread repair kit proved a profitable choice for the **Heli-Coil*** Corporation of Danbury, Conn. Salesmen get a lift from the new glamour pack. Busy mechanics prefer the compact kit that neatly arranges taps and inserts for quick, positive pick. This "see-for-yourself" packaging sparks a drive for new markets, and Ford, Briggs & Stratton, Johnson, Evinrude and Kohler have already made **Heli-Coil*** Kits a byword for thread repair.

Let Tri-State, molders of the world's greatest assortment of rigid plastics, supply the new business stimulus your product needs. Crystal-clear, "bonus" boxes may be your crystal ball into a prosperous sales future.



Tri-State Rigid Plastic Box No. 05, inside dimensions 2" x 5" x 1", is just one of a huge variety of stock shapes and sizes that will fit your product — or we will mold to your specifications.

*REG. U. S. PAT. OFF.

The best Rigid Plastic Boxes are Injection Molded by

TRI-STATE PLASTIC MOLDING CO., Inc.

HENDERSON 6, KENTUCKY

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It is an axiom of modern supermarketing that a quality product must look the part on the retail shelves. That's why Schaefer, America's oldest Lager Beer, uses for its bottle label the most advanced material, enhanced by the latest color-printing techniques. Reynolds Aluminum Foil Labels, printed by Reynolds!

These labels have the practical advantage of standing up indefinitely under wet refrigeration—a factor in some types of outlet. But wherever Schaefer Beer is sold, the dominant advantage is *eye-appeal*...the gleam of gold and silver contrasting with the solid nameplate.

If your product needs *protective* packaging, see the special message below. But remember, whatever your product, eye-appeal helps it sell. And nothing equals Reynolds Aluminum Foil for brilliant eye-appeal. Call the nearest Reynolds Sales Office, or write to **Reynolds Metals Company,** General Sales Office, Louisville 1, Kentucky.

For Protective Packaging, Use the Best and Say So ...with this Seal!

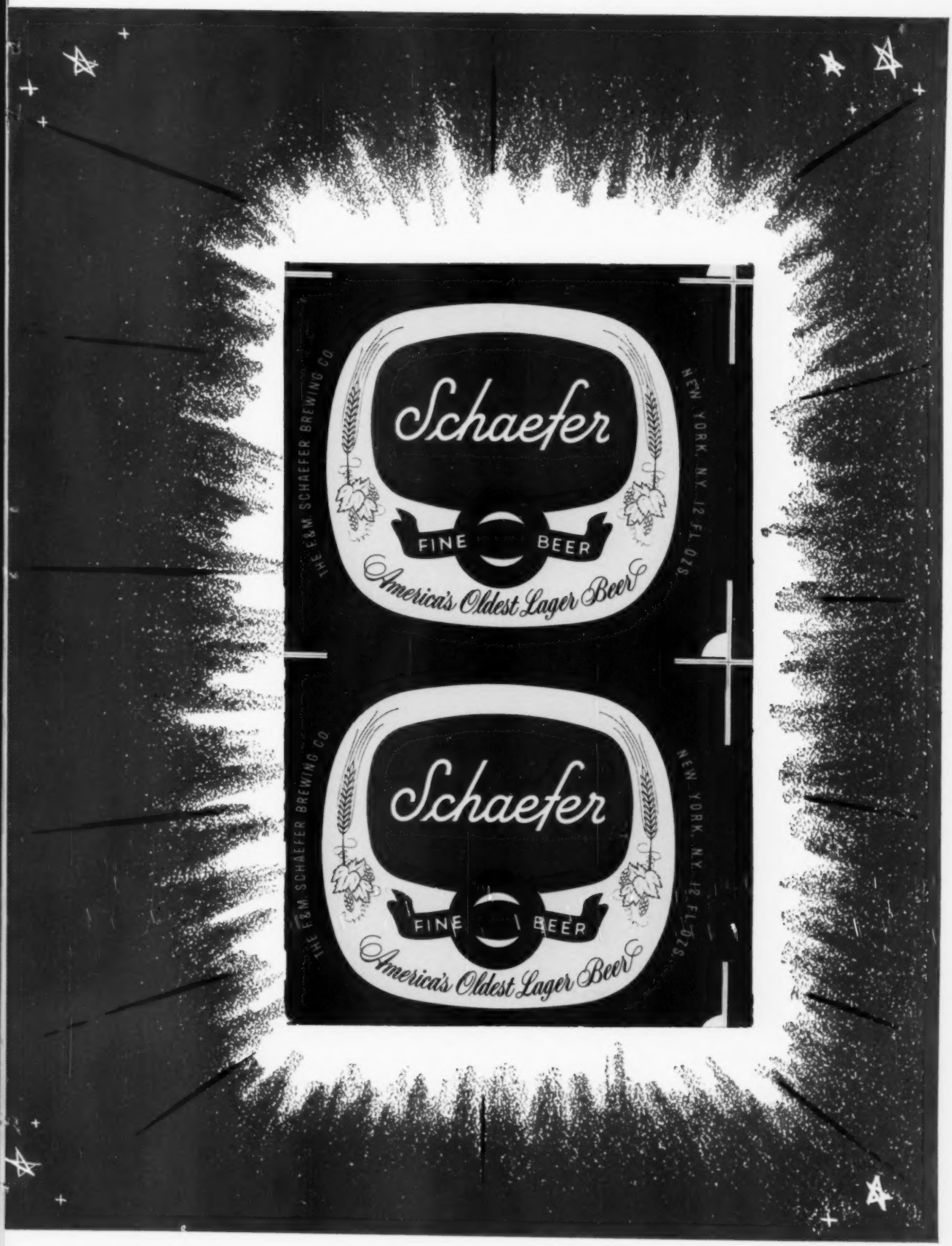
Big full-color full-page Magazine Campaign and weekly TV advertising on Reynolds hit show "MISTER PEEPERS" are making consumers look for the Reynolds Wrap Aluminum Packaging Seal...and guide their purchases by it. More and more packaged products carry this seal. Write for full information.

QUALITY PROTECTED WITH REYNOLDS WRAP ALUMINUM PACKAGING TRADE MARK

SEE "MISTER PEEPERS," starring Wally Cox, Sundays, NBC-TV Network.

REYNOLDS ALUMINUM

Pioneers in Aluminum Foil Packaging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NEW YORK, N.Y. 12 FL. OZS.

FOR THAT "JUST PICKED" LOOK

...PACKAGE IN FILM MADE OF BAKELITE Polyethylene RESIN

This strong, see-through film made of BAKELITE Polyethylene helps preserve the natural tenderness of fresh produce . . . helps prevent changes in moisture content. Fruits and vegetables stay clean . . . protected against rough handling.

Bags made from this outstanding film hold their softness and flexibility, resist tearing, cracking and abrasion through a wide temperature range. Closure can be made by sewing, stapling, tying, or heat-sealing.

Bags for products ranging from stringbeans to wood screws represent just one of the many packaging uses for BAKELITE Polyethylene. This versatile plastic is also laminated to foil and cellophane to provide heat-sealability and added strength; and molded into squeeze bottles and flexible tubes. Why not get the full story on all these applications? Write Dept. XY-55.

Produce Bags by **Kordite Corporation,** Macedon, N. Y.

BAKELITE
TRADE-MARK
Polyethylene

BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation UCC
30 East 42nd Street, New York 17, N. Y.

consider the cucumber

The lowly cucumber ranks high in specialized, purposeful packaging. The thick, tough skin is nature's insulation against heat, earning for the cucumber its enviable reputation for coolness and fresh, crisp texture.

Every product needs specialized packaging. When you rely on Cochran Foil you rely on the source of technical perfection engineered for specialized service—whatever your field, whatever your particular problems.

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the *specialists*
in aluminum foil

Cochran FOIL COMPANY
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The answer in every case is a PLIOFILM lining.

PLIOFILM has an extremely high degree of air-moisture-resistance—making it ideal for such moisture-sensitive products as pharmaceuticals, dessert mixes, dry yeast. But that's not all.

PLIOFILM heat-seals easily at a wide range of temperatures to form a durable weld that's as strong as the package itself. It can be laminated to paper, foils, other films, to itself, or used as a single film. And it takes printing beautifully, adapts readily to packaging machinery.

The Goodyear Packaging Engineer will gladly show you how to make the best possible use of PLIOFILM laminated packages. For help in designing one specifically for your product, write the G.P.E., Pliofilm Dept. T-6418, Akron 16, Ohio.

We think you'll like
THE GOODYEAR TELEVISION PLAYHOUSE
—every other Sunday—NBC TV Network

Pliofilm ONE OF THE GOODYEAR PACKAGING FILMS

Pliofilm, a rubber hydrochloride—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

FROM COAST-TO-COAST . . . IF IT'S PAPERBOARD, CARTONS,

CARRIERS OR SHIPPING CONTAINERS . . . IT'S A JOB FOR . . . . .

GAIR ®

ACM

PRECISIONED
Packaging
Service

ACM-GAIR *Cartons Improve Packaging Efficiency*

ACM-GAIR Folding Cartons do a terrific selling job. They look so good . . they're made so strong . . they add so much to the merchandising power of your product!

ACM-GAIR "Precisioned Packaging Service" supplies many millions of finer Folding Cartons to a host of our country's critical manufacturers, large and small. More and more busy buyers are turning to us for the better quality and service they need.

Check the quality features of the highly successful DOTTIE'S QUICKIE COOKIES cartons pictured here. Foil lined, these scientifically accurate ACM-GAIR packages are greaseproof, stop frostburn, lock *out* moisture, lock *in* all the original kitchen freshness and flavor! These cartons, together with special machines, installed by us within six weeks, *increased production 300%! . . cut labor costs in HALF!*

If you have a packaging problem, by all means use our free consulting service. Put it up to our capable engineers. Send for our Packaging Problem Data Sheet or write us now about your needs.

AMERICAN COATING MILLS DIVISION • ROBERT GAIR COMPANY, INC.

228 North LaSalle Street, Chicago 1, Ill.

A SCIENTIFIC, SPECIALIZED, FULLY INTEGRATED PAPERBOARD, FOLDING CARTON, CARRIER AND SHIPPING CONTAINER SERVICE. SALES OFFICES IN PRINCIPAL CITIES OF U. S. AND CANADA. MILLS & PLANTS: CAMBRIDGE, MASS. • CHICAGO, ILL. • CLEVELAND, OHIO • ELKHART, IND. • GRAND RAPIDS, MICH. • HAVERHILL, MASS. • HOLYOKE, MASS. • LOS ANGELES, CALIF. • MARTINSVILLE, VA. • MIDDLETOWN, OHIO • NATICK, MASS. • NEW LONDON, CONN. • NORTH TONAWANDA, N. Y. • PHILADELPHIA, PA. • PIERMONT, N. Y. • PORTLAND, CONN. • PORT WENTWORTH, GA. • RICHMOND, VA. • SYRACUSE, N. Y. • TETERBORO, N. J. • TONAWANDA, N. Y. • IN CANADA: CAMPBELLFORD, ONT. • EDMONTON, ALBERTA • FRANKFORD, ONT. • LONDON, ONT. • MONTREAL, QUE. • TORONTO, ONT. • WINNIPEG, MAN.

Free

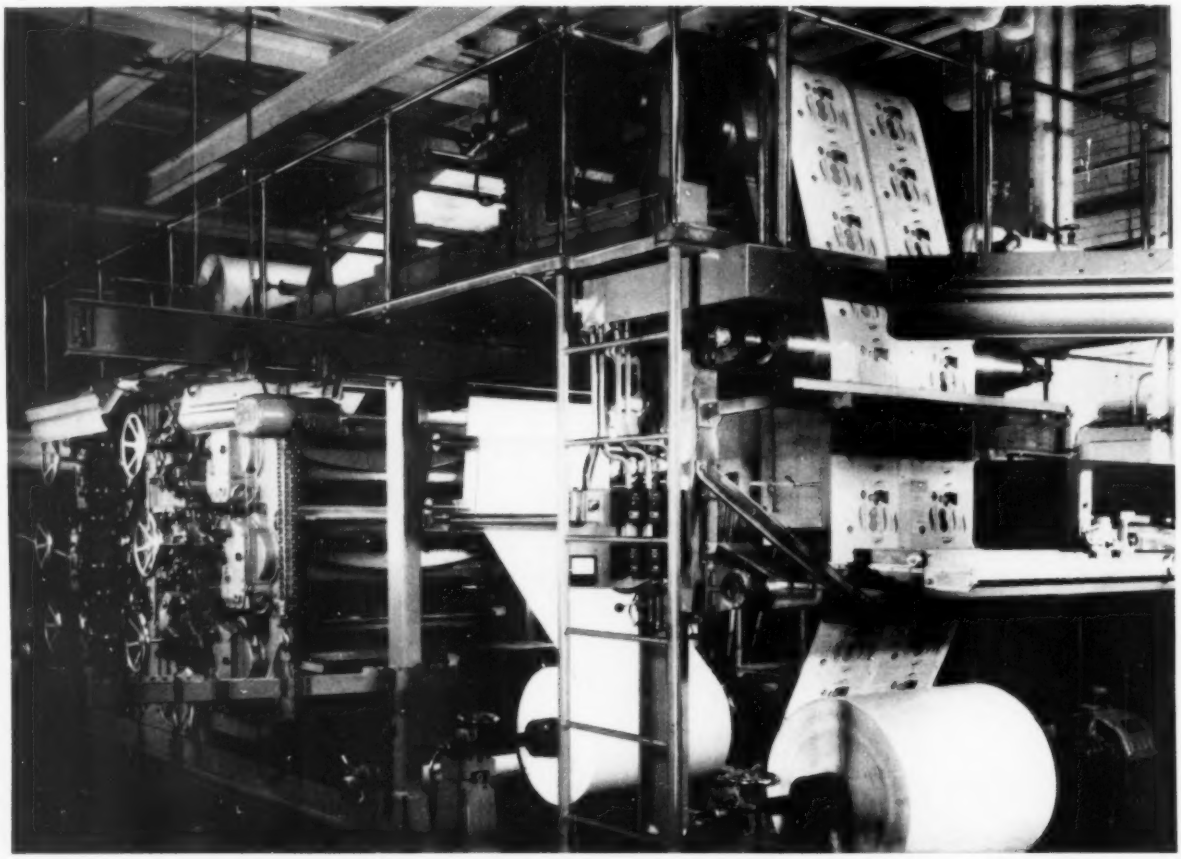
CONSULTING SERVICE

Send for the ACM-GAIR Packaging Problem Data Sheet! Fill in and return it for *scientifically accurate* analysis and recommendations. Our skilled engineers will apply their vast experience, their specialized knowledge of paperboard, construction, design, color harmony, mechanical production, merchandising, and other factors to your specific problem! Extensive ACM-GAIR Mills and Plants produce many types of Paperboard. We can therefore select the ONE BEST grade for your needs. This valuable "Precisioned Packaging Service" does not obligate you in any way. Write today!

ACM-GAIR

QUALITY FEATURES

1. FOIL LINED FOR PRODUCT PROTECTION
2. BRILLIANT "PRECISIONED" PRINTING
3. PRINTING SURFACE TAILORED TO THE JOB
4. SPECIAL INKS WITHSTAND 20° BELOW!



NEW 6-COLOR GIANT for NEW PACKAGE APPEAL

Four colors in one printing used to be quite an achievement, then came the presses that could print five colors at once — and now six colors have been added to the range of KVP production.

It broadens the design horizons of packaging stylists . . . permits an almost unlimited selection of colors for adding dramatic new buying appeal to packages, on which so much depends at the point of sale.

Combine this new printing flexibility with the new unrivalled brilliance and sealing qualities of KVP Kalapak (for frozen foods) and KVP Super Kalakote for other foods, and you have today's best answer to many marketing problems — and lower packaging costs.

The colorful brilliance of reproductions by either letterpress or gravure on KVP papers is a continual source of satisfaction to sales-minded food producers. If you haven't seen examples lately, send for some today.

KALAMAZOO VEGETABLE PARCHMENT COMPANY

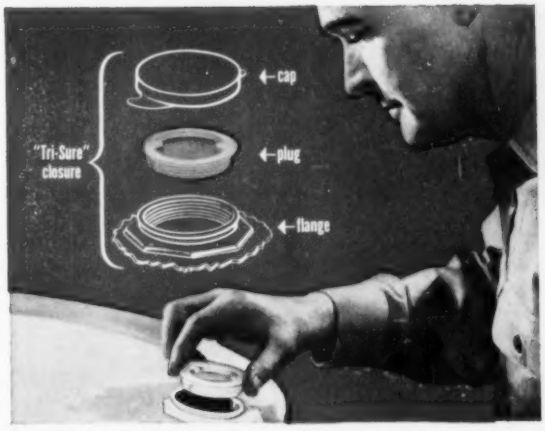
Parchment, Kalamazoo, Michigan

BRANCH AT DEVON, PA. ASSOCIATED COMPANIES: KVP CO. OF TEXAS, HOUSTON, TEXAS — HARVEY PAPER PRODUCTS CO., STURGIS, MICH. — KVP CO. LTD., ESPANOLA, ONT. — APPLEFORD PAPER PRODUCTS LTD., HAMILTON, ONT.; MONTREAL, QUE.

Specialists in FOOD PAPERS KVP For Protection and Sales Appeal

Du Pont "ALATHON" points the way to improved package design

Cosmetic jar of "Alathon" is injection-molded with double wall, to keep product fresh . . . is non-contaminating.



PLUGS molded of Du Pont "Alathon" are tough, re-usable . . . molded in one integral part complete with threads.

DU PONT "ALATHON"* polyethylene resin is a versatile engineering material ideally suited for the packaging industry. "Alathon" is inert to most chemicals . . . tough and flexible even at low temperatures.

"Alathon" polyethylene resin needs no plasticizer and is free from odor, taste and toxicity. It is light in weight (sp. gr. 0.92) and has a low rate of water-vapor transmission. And "Alathon" is readily molded in many convenient shapes and sizes.

Investigate the properties of Du Pont "Alathon" and the other members of the Du Pont family of engineering materials—"Zytel"* nylon resin, "Teflon"* tetrafluoroethylene resin, and "Lucite"* acrylic resin. The applications shown on this page are typical of the packaging improvements made possible when design and service requirements are evaluated in terms of the properties of these unique engineering materials. For further information, use the coupon below.

*Trade-marks of E. I. du Pont de Nemours & Co. (Inc.)

SQUEEZE BOTTLES of "Alathon" are unbreakable, pleasantly warm to the touch, enhance sales appeal.

DU PONT
ALATHON
Polyethylene Resin
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department
Room 248, Du Pont Building, Wilmington 98, Delaware.

Please send me more information on Du Pont "Alathon" polyethylene resin: Uses ☐; Processing Techniques ☐; Properties ☐. I am also interested in receiving more information on: "Zytel" nylon resin ☐; "Teflon" tetrafluoroethylene resin ☐; "Lucite" acrylic resin ☐.

Name _____
Title _____
Firm Name _____
Street Address _____
City _____
State _____
Type of Business _____

John Dale OF ENGLAND

for quality containers

Collapsible tubes, metal containers, closures to your exact specification—and made with p-r-e-c-i-s-i-o-n

AGENTS IN INDIA

HOARE MILLER & COMPANY LIMITED,
5 FAIRLIE PLACE,
P.O. BOX NUMBER 63.
CALCUTTA, I.

JOHN DALE LIMITED

JOHN DALE LIMITED, BRUNSWICK PARK ROAD, NEW SOUTHGATE, LONDON, N.11. ENGLAND. TEL: ENTERPRISE 1272

49 reasons for Cellophane

Tray overwrap is Sylvania Cellophane 300 MS-3.

Forty six of them are the crisp, crunchy, appetizing looking "Chocolate Nuggets"...."From The Thousand Window Bakeries."

The other three are the crystal clear transparency, moisture-protecting qualities, and ease of application provided by the Sylvania Cellophane.

Wherever appetite-appeal is a "must" —that's where you need economical, sales-building *Sylvania* Cellophane most!

SYLVANIA CELLOPHANE

SYLVANIA DIVISION, AMERICAN VISCOSE CORPORATION

SYLVANIA CELLOPHANE

What's your Gravure I.Q.?

Does your present equipment make the grade? See how it rates with the requirements that are "musts" in modern gravure printing.

FLEXIBILITY

YES NO 1. Can your present gravure press handle *any* type of work, avoiding the need for a number of different models to meet requirements?

YES NO 2. Is your present press so constructed that maximum pressures to print board and difficult materials be obtained *without* damaging your drives and shafts?

YES NO 3. Can you print cellophane and films at 0 lbs. kiss impression?

YES NO 4. Can you obtain and return to these pressures *automatically* . . . *without* going from one color station to another and doing it manually?

YES NO 5. Can you lift your impression *without* loss of web tension?

YES NO 6. Can you adjust your press to run its *full* size range *without* the aid of extra-equipment-size feed and pull cylinders or change gears?

YES NO 7. Can you adjust your doctor blade to any size cylinder and to the proper angle of wipe *without* the aid of special equipment?

DESIGN

YES NO 8. Can you *see* what pressures you are printing with so they can be recorded for future references?

YES NO 9. Can you web your press from the floor, *without* using a step ladder or some trick gimmick?

YES NO 10. Do you have fully automatic tension control, to avoid having to rely on brake tension or friction devices?

YES NO 11. Can you purchase interchangeable spare equipment for your press?

YES NO 12. Will your press have substantial resale value after twenty years of operation?

YES NO 13. Does your press have dynamically-balanced, light-alloy idler rollers to reduce web drag?

YES NO 14. Does your press have ample reserve power capacity to handle the increased loads of additional color units or fabricating equipment you may require in the future?

YES NO 15. Can any or all of your units be used for back printing *without* the aid of turning bars?

YES NO 16. Is *all* of your equipment wired to meet the local Underwriter's Code (explosion proof)?

YES NO 17. Can you quickly and easily withdraw the engraving cylinder assembly to the operator's side of the press?

YES NO 18. Is your ink tank mounted in a convenient, out-of-the-working area position, yet fully accessible from the operator's side of the press?

PRODUCTION

YES NO 19. Do you have the *shortest* possible web leads? (Long web leads add to your waste and disturb tension, causing loss of register.)

YES NO 20. Do you have the *maximum* amount of web under the dryers so that most of your web is not dead?

YES NO 21. Can your pressman register the printing units from a single central control panel?

YES NO 22. Does your press deliver face-up, so that sheeter and die cutting operations can be done inline *without* turning the web?

YES NO 23. Are all your normal press operations automatic or push-button controlled, thereby eliminating the necessity for an experienced pressman to "judge" the adjustments.

SERVICE

YES NO 24. Are *local* service offices readily available to provide maintenance and spare parts for your impression system equipment?

YES NO 25. Are factory-trained servicemen available to aid you in installation, maintenance, and technical problems?

SUPPLIER RELATIONS

YES NO 26. Do you think your present presses are engineered with *your needs* in mind rather than engineered to increase the manufacturer's margin?

YES NO 27. In your experience, have you found that your supplier did *not* forget you after he had completed the sale?

YES NO 28. Would you want *more* of his equipment?

YES NO 29. Can he supply you with a *full* line of converting equipment, thereby avoiding a "pieced-together" press to do your inline work?

YES NO 30. Does your supplier have a solid background of experience in building this type of equipment?

YES NO 31. Does your present supplier furnish *all* the main press components and manufacture a *complete* line of auxiliary equipment, eliminating divided responsibility?

IN BUYING EQUIPMENT

YES NO 32. If you had it to do again, would it now be your opinion that a stripped press, lacking in automatic and centralized control features, would result in higher operating cost?

If you can answer "YES" to *all* these questions, you *must* own — or plan to purchase —

CHAMPLAIN GRAVURE PRESS EQUIPMENT

Champlain

Champlain manufactures a complete line of rotogravure, flexography, rotary letterpress and allied equipment for packaging and specialty printing.

3402

Write today for your copy of "Rotogravure." It's a 78 page text book on the subject. Champlain Company, Inc., 88 Llewellyn Avenue, Bloomfield, N. J. Chicago Office: 520 N. Michigan Avenue, Chicago 11, Ill.

these customers know

products sell faster, easier in CHASE **Polytex** BAGS

Want to see your profits grow? Simple! SHOW YOUR PRODUCT . . . Expose it to the light of day with clean, sparkling *transparent* Chase Polytex Bags.

The packers shown here have found that Chase Polytex gives them sharp, clear printing that *won't* rub off . . . packages that *stay* neat in the store and "sell" like seasoned troopers . . . packages that are unsurpassed for eye-appeal and buy appeal . . . packages that can often be re-used in the home by the consumer. Why not write for complete information on these Chase super-salesmen today.

SINCE 1847

CHASE BAG COMPANY

GENERAL SALES OFFICES: 309 W. JACKSON BLVD., CHICAGO 6, ILL.
30 BRANCHES AND SALES OFFICES STRATEGICALLY LOCATED

Handy idea..

It's a wise move to put a few standard drug items in with the luggage . . . never can tell when they will be needed to keep the vacation going smoothly. And folks who know the Purex label will tell you that Purex drug products afford complete satisfaction.*

* *These Purex drug products are part of the line packed by Purex Products, Inc., Baltimore, Md.*

The Purex products shown here are sealed with Crown Screw Caps with the famous Deep Hook Thread, the thread that keeps production lines moving. Crown Screw Caps go on smoothly and quickly . . . there's never a hitch in the packing process. They seal efficiently . . . help keep your product in tip-top condition. And they are easily removed . . . a feature consumers really like.

Combined with Crown's Deep Hook Thread are a variety of liners to assure the right seal for any product. For special problems, Crown provides a Customer Service at no obligation. If you're stuck for the answer to a sealing problem, won't you call your Crown Representative? Crown Cork & Seal Company, Inc., Closure Division, Baltimore 3, Md. *World's Largest Maker of Metal Closures.*

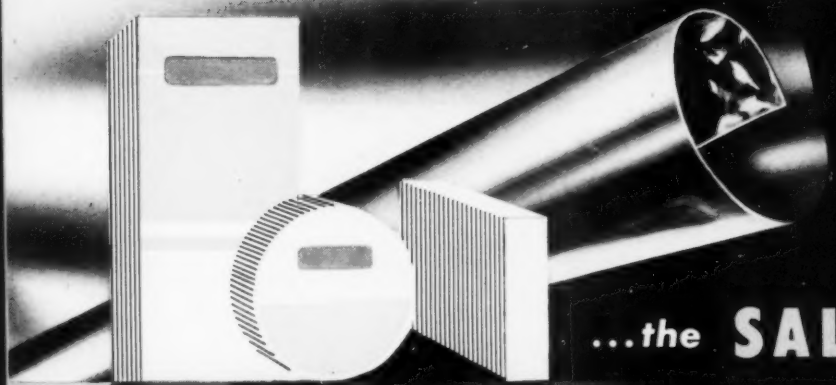
CROWN

CROWN CLOSURES

Approved by millions of housewives

PURE ALUMINUM

FOILS by JOHNSTON



...the SALES DYNAMIC in MODERN PACKAGING

What are YOUR *Needs?*

SINCE 1889

JOHNSTON FOIL MANUFACTURING CO.

6016-6296 S. BROADWAY
ST. LOUIS 11, MISSOURI

608 SOUTH DEARBORN . . . . . CHICAGO, ILLINOIS
34 EXCHANGE PLACE . JERSEY CITY, NEW JERSEY
633 SOUTH LA BREA AVE. . LOS ANGELES, CALIFORNIA
7446 VINE STREET . . . . . CINCINNATI, OHIO

CARRY CARTONS

Many rotogravure carton printers order their cylinders engraved by Beck because our clean, deep etchings insure uniform color printing. Moreover, every Beck engraved cylinder is prematched to the cutting and creasing die for high speed in line production. Why not take advantage of our complete rotogravure service . . . artwork to chrome plated rolls?

ROTOGRAVURE CYLINDERS

The Beck Engraving Company • 105 South 7th Street, Philadelphia 6

A new product from one of America's foremost manufacturers of quality cleansing agents, Procter and Gamble's Gleem is winning instant favor with consumers everywhere.

To package Gleem for the highly competitive market, Procter and Gamble naturally selected a Wirz tube . . . custom designed to insure the utmost in product protection, convenient use and eye-catching sales appeal.

Develop new buying habits for your product with attractive, collapsible metal tubes by Wirz. Discuss your packaging requirements with our representative or write today for your copy of "Wirz Collapsible Metal Tubes" without obligation.

ESTABLISHED 1836

4th and Cole Sts.
Chester, Pa.

New York 17, N. Y. 50 E. 42nd St. | Chicago 4, Ill. 80 E. Jackson Blvd. | Memphis 2, Tenn. Wurzburg Bros. | Los Angeles 48, Calif. 435 S. La Cienega Blvd. | Havana, Cuba Roberto Ortiz & Son

Export Division — 751 Drexel Bldg., Philadelphia 6, Pa.

Collapsible Metal Tubes · Lacquer Linings · Wax Linings · Westite Closures · Soft Metal Tubing · Household Can Spouts · Applicator Pipes · Compression-Injection Molding

U.S. Automatic Machines
FILL YOUR PACKAGES BEST

THE MODEL TBS
For Automatic Tablet or Pill Counting and Filling

The fully automatic Model TBS fills bottles, cartons, boxes and other rigid containers with any desired count of pills, tablets and capsules unerringly and rapidly. It mechanically counts and drops tablets into the container, producing up to 150 filled bottles or boxes per minute depending upon the count. Because of its unique and simple design, it may be economically, easily changed over to suit a wide range of requirements.

THE SCOTT NET WEIGHER
For Packaging Free-Flowing Materials

For weighing and filling free-flowing and semifree-flowing materials into cans, bottles, cartons or bags, Scott Net Weighers have no equal for speed and accuracy. A single Dump Scott Net Weigher will operate semiautomatically at speeds up to 35-40 packages per minute; automatic units up to 60 per minute. Scott Scales are made in several sizes and types to suit product and weight specifications.

THE BOND FILLING MACHINES
For Nonfree-Flowing, Powdered and Granular Materials

Semiautomatic and fully automatic high-speed Bond Fillers handle a wide range of nonfree-flowing or dusty materials, filling at speeds up to 120 packages per minute. Bond Auger Filling machines with one, two or four filling stations are available for volume filling, gross weighing or packing.

THE MODEL C-10-CC
For Cartoning Candy

This versatile machine is receiving wide acceptance in the candy industry. It is possible on the one machine to fill an entire range of candy items without the use of extra equipment provided the same size carton is used. The C-10-CC automatically opens flat folded cartons, tucks bottoms, cuts, forms and inserts liner, volume fills candy, then folds and tucks liner top flap of carton. The liner may be omitted when desired.

These and other machines manufactured by **US** will fulfill your requirements for packaging machinery. It will pay you to discuss your problem with **US** as it has the packers of the containers shown. Write **US** today.

US

NET & GROSS WEIGHING ★ PACKAGE FORMING & FILLING ★ CARTON SEALING, LINING, WRAPPING ★ BOX MAKING

AUTOMATIC BOX MACHINERY CO., INC.

Owning and Operating NATIONAL PACKAGING MACHINERY CO. ★ CARTONING MACHINERY CORP.

122 ARBORETUM ROAD, ROSLINDALE, BOSTON 31, MASS.

Add THREE factors... Get a successful selling package!

First, *know* what appeals to today's shopper. Guaranteed freshness all the way through certainly does . . . and a fractional package will insure freshness right down to the last cracker.

Second, add the *right* film . . . one which will meet the protective needs of your product.

Third factor . . . construct an *efficient* package—one which will give you impulse-sales-promoting appeal.

You can rely on Du Pont, with 30 years of packaging experience and over 110 varieties of transparent films, to help you develop a package built around these three essentials.

Get in touch with your Du Pont representative and for information on bags or printed materials call your converter of Du Pont packaging films. E. I. du Pont de Nemours & Co. (Inc.), Film Department, Wilmington 98, Delaware.

Why Du Pont is packaging-film headquarters

1. **WIDE VARIETY OF PACKAGING FILMS** scientifically tailored to meet the needs of varied products and packages.
2. **TECHNICAL** assistance to help you plan the most practical and efficient construction of your package.
3. **MERCHANDISING** help through continuing nation-wide surveys of buying habits, to keep your package up to date.
4. **NATIONAL ADVERTISING** to continually strengthen consumer preference for your packaged products.

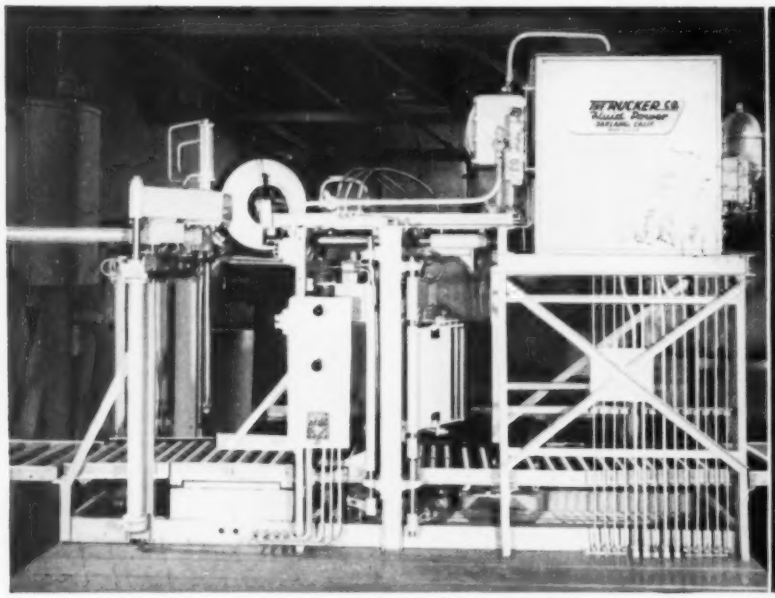
DU PONT
PACKAGING FILMS
CELLOPHANE
POLYETHYLENE · ACETATE

DU PONT

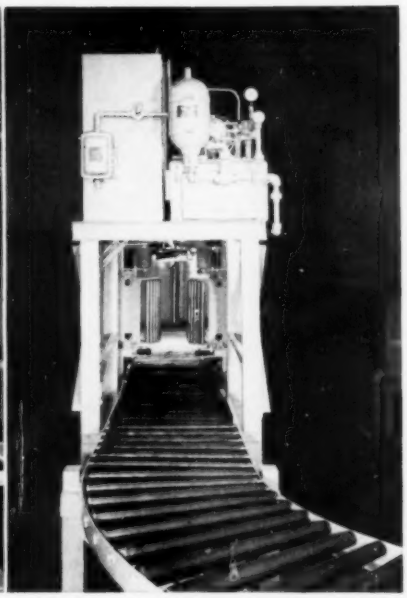
REG. U.S. PAT. OFF.

Better Things for Better Living
...through Chemistry

Take this approach to faster drum filling — *and* save



Front view, The Rucker Automatic Drum Filler



View along the approach conveyor leading into the Rucker Automatic Drum Filler

The RUCKER Automatic Drum Filler

The Rucker Automatic Drum Filler completely eliminates manual handling of drums during the filling operation. Manned by a single attendant, this unit accepts drums; locates and indexes bung openings; fills, weighs and releases drums with a speed that assures maximum efficiency and economy at any rate of production.

By actual test, the Rucker Automatic Drum Filler more than triples the output of an average manual filling station.

Precision-engineered for maximum flexibility, consistent with accuracy, the Drum Filler permits quick changeover from one product to another through fast, easy interchange of filling lances. It accommodates all existing 53-55 gallon drums (except the Bayonne Barrel) and automatically compensates for variations in tare weights, limiting overfill to a minimum of one pound.

Submerged filling, accomplished by a hydraulically-controlled lance, minimizes foaming and avoids static spark discharge. Additional lances are available for multiple-product filling lines. Special stainless steel lances may be had for filling corrosive materials or food stuffs.

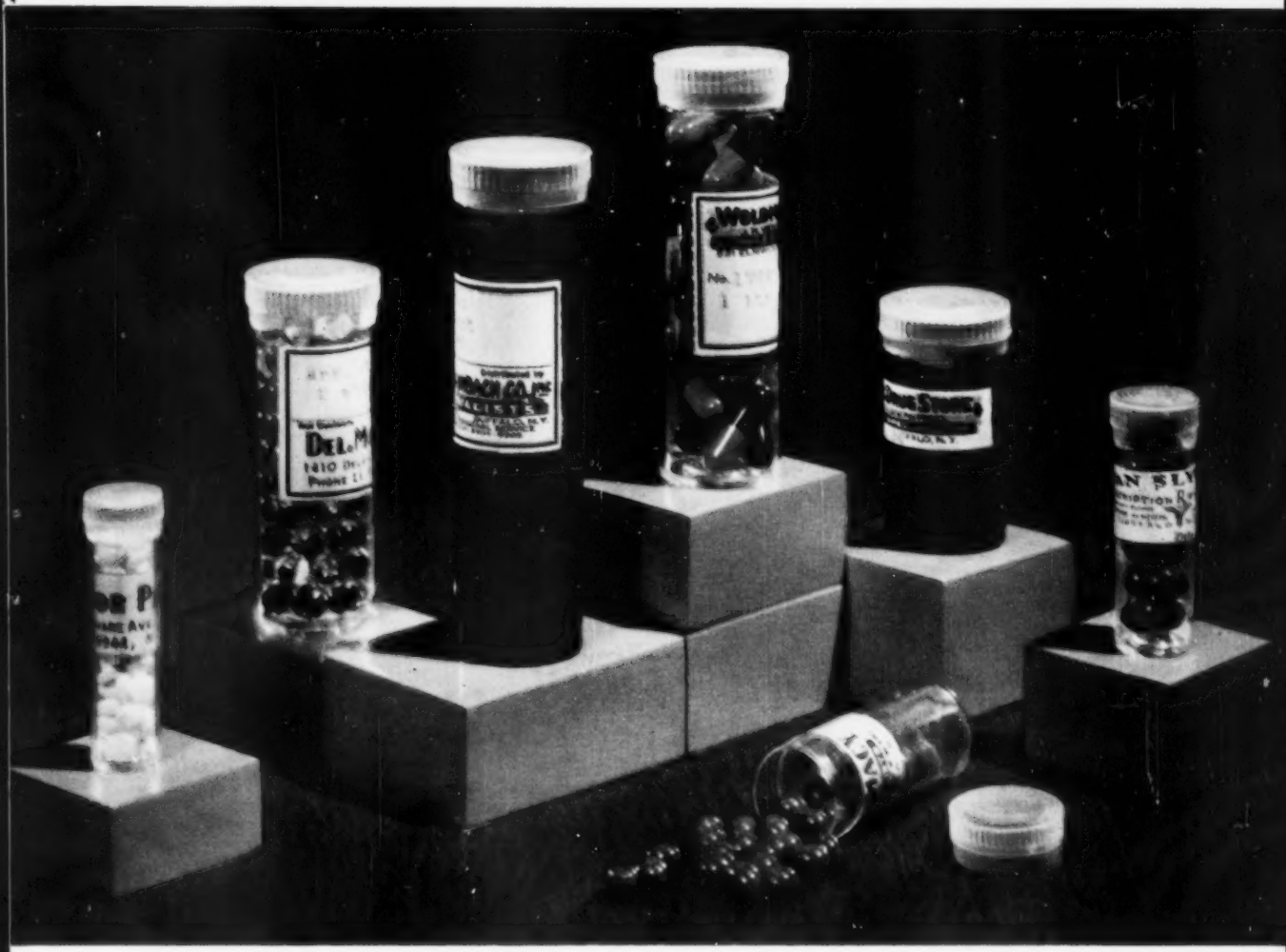
When the volume at a given filling station does not require the speed and capacity of the Automatic Drum Filler, the efficiency and economy of the station can be substantially increased by the Rucker Semi-Automatic Drum Filler, which performs all of the functions of the Automatic unit except the positioning of the bungs. The special Semi-Automatic unit may be converted to full automatic operation if desired.

Write, today, for full information on these high-efficiency units. We will welcome an opportunity to furnish proof of the ability of our equipment to cut packaging costs on any operation.

THE RUCKER COMPANY

4228 Hollis St., Oakland 8, California, OLympic 3-5221

"DOC" had a Packaging Problem, too



Clearsite* solved it for him...
...they can solve it for you

"Doc," the druggist, has to protect his pharmaceuticals. That's part of his ethics. He has to merchandise them, too. Celluplastic transparent containers solved both problems simultaneously for him. They'll do the same for you.

Whether you're selling pills or drills, fish hooks or lipsticks, package them in Clearsite Transparent plastic containers and you'll put them on the path to greater sales. They compliment and protect your products. Any lettering, design or trade mark can be permanently printed in colors right on the container. They're feather-light, moisture-tight, priced right. Available in many sizes and adaptable to a wide variety of closures.

WRITE TODAY FOR DESCRIPTIVE LITERATURE

CELLUPLASTIC CORPORATION

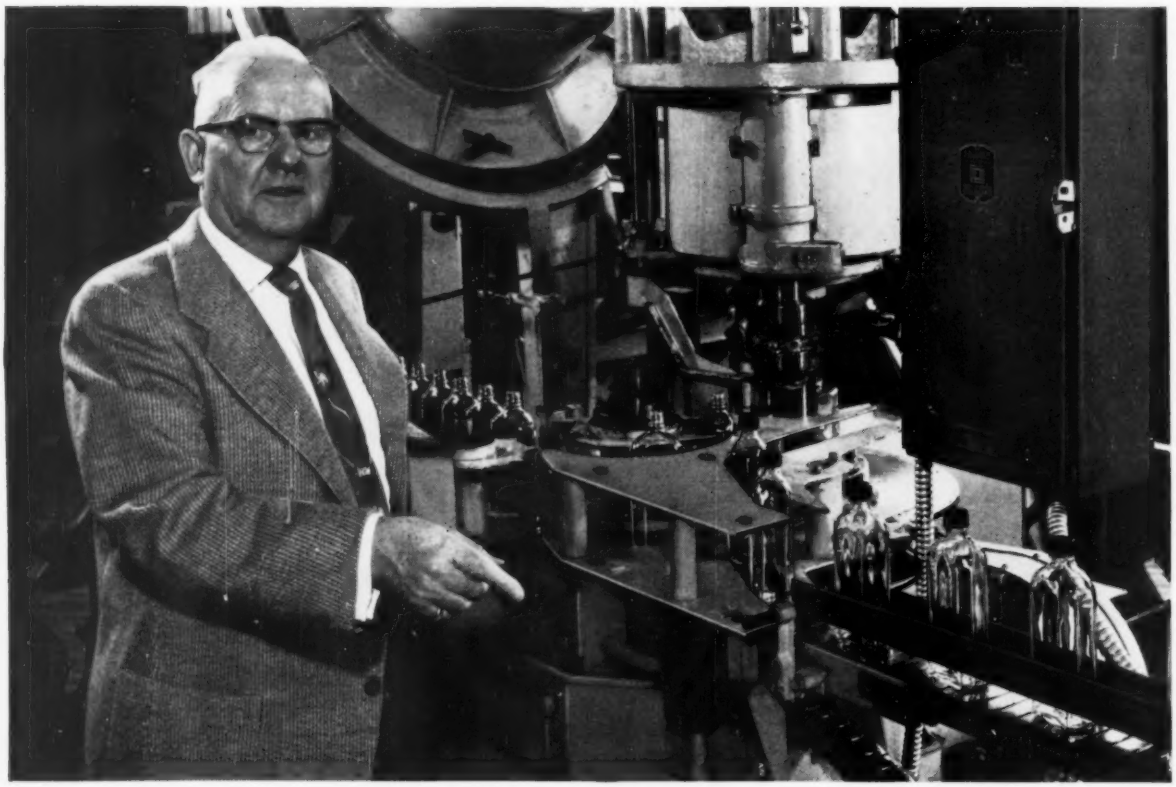
General Offices: 50 Avenue L, Newark 5, N. J.

TRANSPARENT

Clearsite*

PLASTIC CONTAINERS *that Sell*

*REGISTERED TRADE MARK



LOOK AT THE FLOOR...

for proof of this cap's extra strength

One quick glance at the floor! That's all it takes to tell you how a molded cap's performing. When it's an Armstrong's Hi-Tork®, you won't see your floor littered with broken caps. And that's a simple thing to prove.

Hi-Torks are made to take the beating of high-speed capping lines. They're reinforced at stress points with extra plastic. Dome, thread, and skirt are designed for exactly the torque and impact each has to take.

So set up a test run and look at the floor. You'll *see* that Hi-Tork Caps are stronger. Ask your Armstrong man or write Armstrong Cork Co., Glass and Closure Division, 5308 Clay Street, Lancaster, Pennsylvania.

ARMSTRONG'S *"HI-TORK"* MOLDED CAPS

"SEE SEE SEÑOR" means

Good Packaging in any language

with *SHOWBAGS!**

Packaging has always been important, but today's retailing trend towards self-service demands packaging that will do a bigger share of the selling job. Strong, transparent polyethylene SHOWBAGS glamorize the products they protect . . . brilliant, permanent printing clinches sales at the point of purchase.

SHOWBAGS for distributing samples of tortilla flour include instructions, recipes and a generous measure of sales appeal through dramatic design and sparkling printing.

What a wonderful way to package tortillas—made by experts and sealed for protection in strong, moisture-proof SHOWBAGS, colorfully printed to arouse interest.

Tamales in opaque, white polyethylene SHOWBAGS have added appeal with their attractive, 3-color design. Handy and palate-tempting in dealers' refrigerated displays for shoppers to take home, prepare and enjoy; or store in home freezers.

For better protection, brighter displays, brisker sales, write for samples of SHOWBAGS.

CENTRAL STATES

PAPER & BAG CO.

5221 NATURAL BRIDGE ST. LOUIS 15, MO.

*T. M. REG.

Offices in Principal Cities • Plants in: ST. LOUIS • BEACON, N. Y. • SALT LAKE CITY • AUBURN, WASH. • PALATKA, FLA.

NORWICH CHOOSES ALCOA PILFERPROOFS FOR PURITY, FAST APPLICATION AND PROTECTION ALL THE WAY

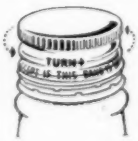
Famous Norwich Pepto-Bismol and other Norwich specialties, such as Terpin Hydrate, move from bottling line to store to user at full strength and 100 per cent pure. Alcoa® Pilferproof Closures see to that.

To Norwich, Alcoa Pilferproofs mean a hermetic seal every time, elimination of costly secondary seals and high application speeds. To druggists, Pilferproofs mean protection against accidental opening and an extra sales advantage for a quality line of products. To users, Pilferproofs mean easy opening and the guarantee that nontoxic aluminum will never harm the products it protects.

For full information on Pilferproof and other Alcoa Closures, just call your local Alcoa sales office, listed under "Aluminum" in your classified phone book. Or write for free catalog. ALUMINUM COMPANY OF AMERICA, 1705-H Alcoa Building, Pittsburgh 19, Pa.

Here's How Alcoa Pilferproofs Prevent Tampering

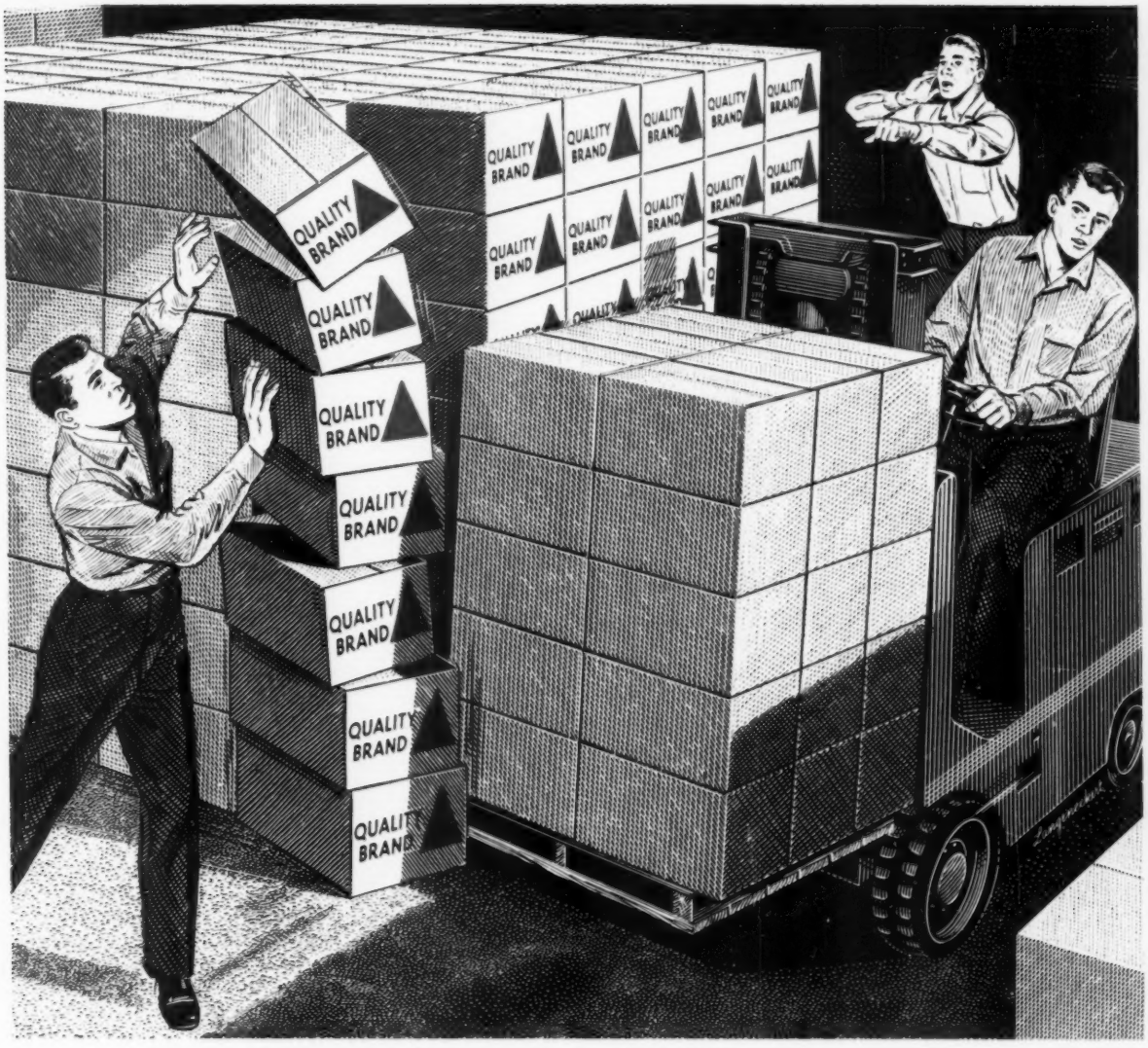
The rolled-on locking ring joined to the cap shows that the Alcoa Pilferproof has never been opened.



Cap, when removed, breaks away from locking ring—gives permanent evidence of tampering.

ALCOA CLOSURES

ALUMINUM COMPANY OF AMERICA



"Wham!" The Extra Protection of Gaylord Boxes Pays Off Again!

Unexpected accidents can happen to your product any time—in factory or warehouse . . . in transit . . . in delivery.

The extra protection built into Gaylord Boxes helps bring your product to the point-of-sale in factory-fresh condition. This will reduce damage claims.

Many of the country's leading manufacturers learned long ago that the quality materials and construction of Gaylord Boxes assure *profit* protection through product protection.

A phone call to your nearby Gaylord sales office will put Gaylord engineering skill to work on your packaging problems.

GAYLORD CONTAINER CORPORATION

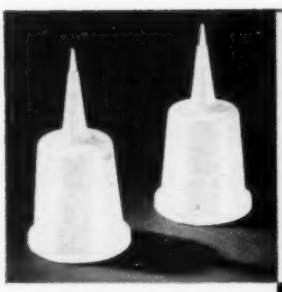
SALES OFFICES

Gaylord Boxes

General Offices: ST. LOUIS, MISSOURI

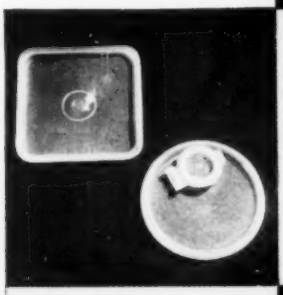
COAST-TO-COAST

CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT PAPER AND SPECIALTIES • KRAFT BAGS AND SACKS



NOBODY HAS AS MUCH EXPERIENCE AT MOLDING POLYETHYLENE AS

TUPPER!



Tupper Seals are air and liquid-tight flexible covers. The famous Pour All and Por Top covers are designed for easy dispensing. They are made in sizes to fit all Tupperware containers.

The logical molder for you to consult regarding that product or package of yours which is to be made of polyethylene is Tupper. Tupper has done more than any other molder to make molded polyethylene a practical reality.

Aside from having designed, patented, and promoted successful seals, closures, and dispensers for polyethylene containers, the Tupper Corporation has vast experience in *every phase* of polyethylene packaging and polyethylene injection molding. This experience will be of major importance in improving your product, in reducing your costs, when Tupper goes to work for you.

Tupper's combination of experience, technical ingenuity, and the most modern equipment is at your service for the custom molding of your product in polyethylene. You can do no better than the best ...and the best at molding polyethylene is Tupper!

When equipped with Tupper Seals, Tupper Canisters, Sauce Dishes, Wonder Bowls, Cereal Bowls and Funnels in various sizes are the most versatile reusable containers you have ever seen.

TUPPER!
TRADE MARK

TUPPER PRODUCTS ARE FULLY PROTECTED

About 150 United States and foreign patents and patents applied for, plus numerous trademarks and copyrights, cover the design and manufacture of the various types of Tupper Seals and other Tupper Products. Unauthorized manufacture of items covered by Tupper patents will subject infringers to prosecution.

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Manufacturers of — CONSUMER, INDUSTRIAL, PACKAGING AND SCIENTIFIC PRODUCTS

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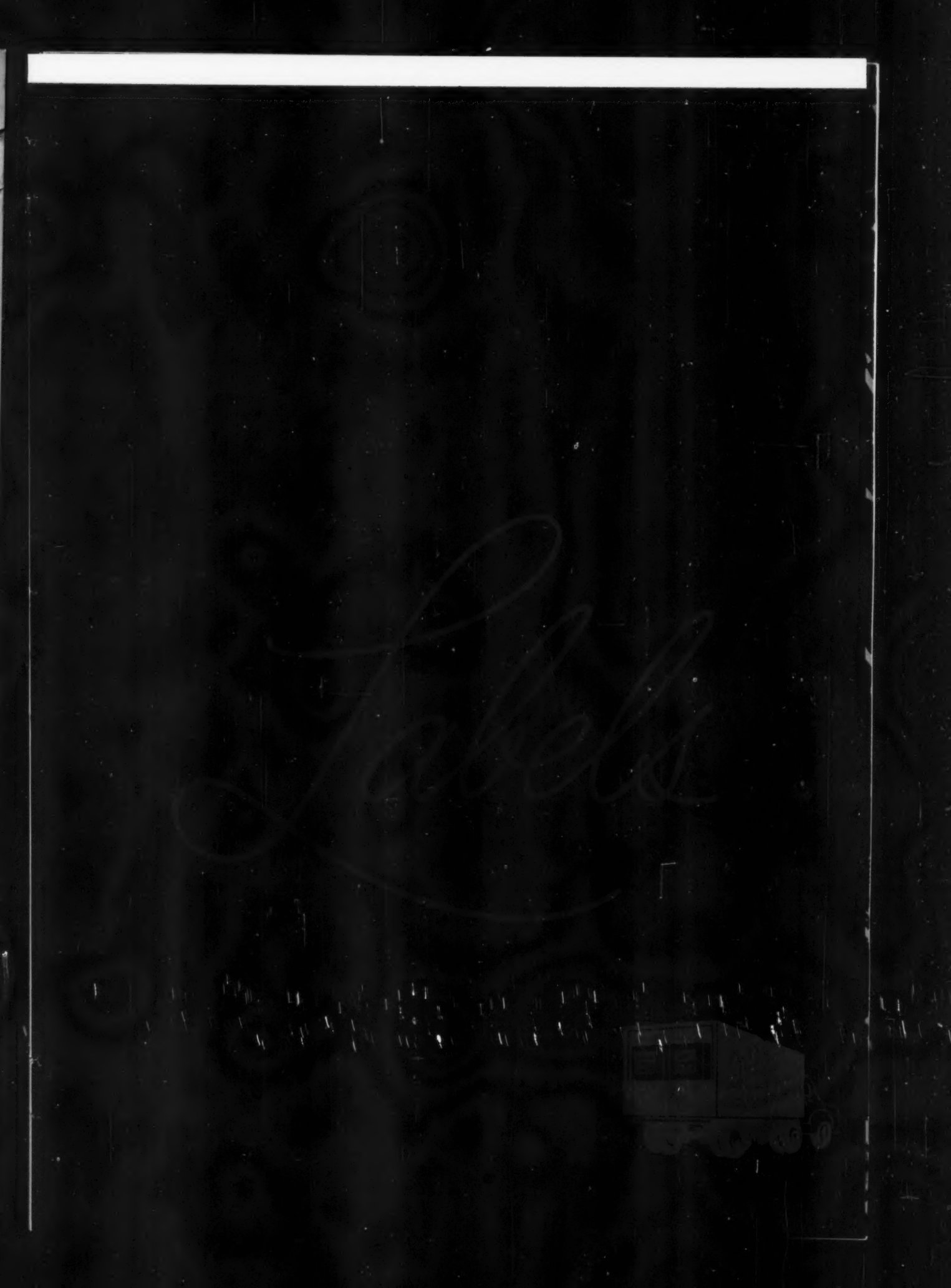

Colonial
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LABEL

CAUTION
THIS SIDE UP
HANDLE WITH CARE
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RECEIVER
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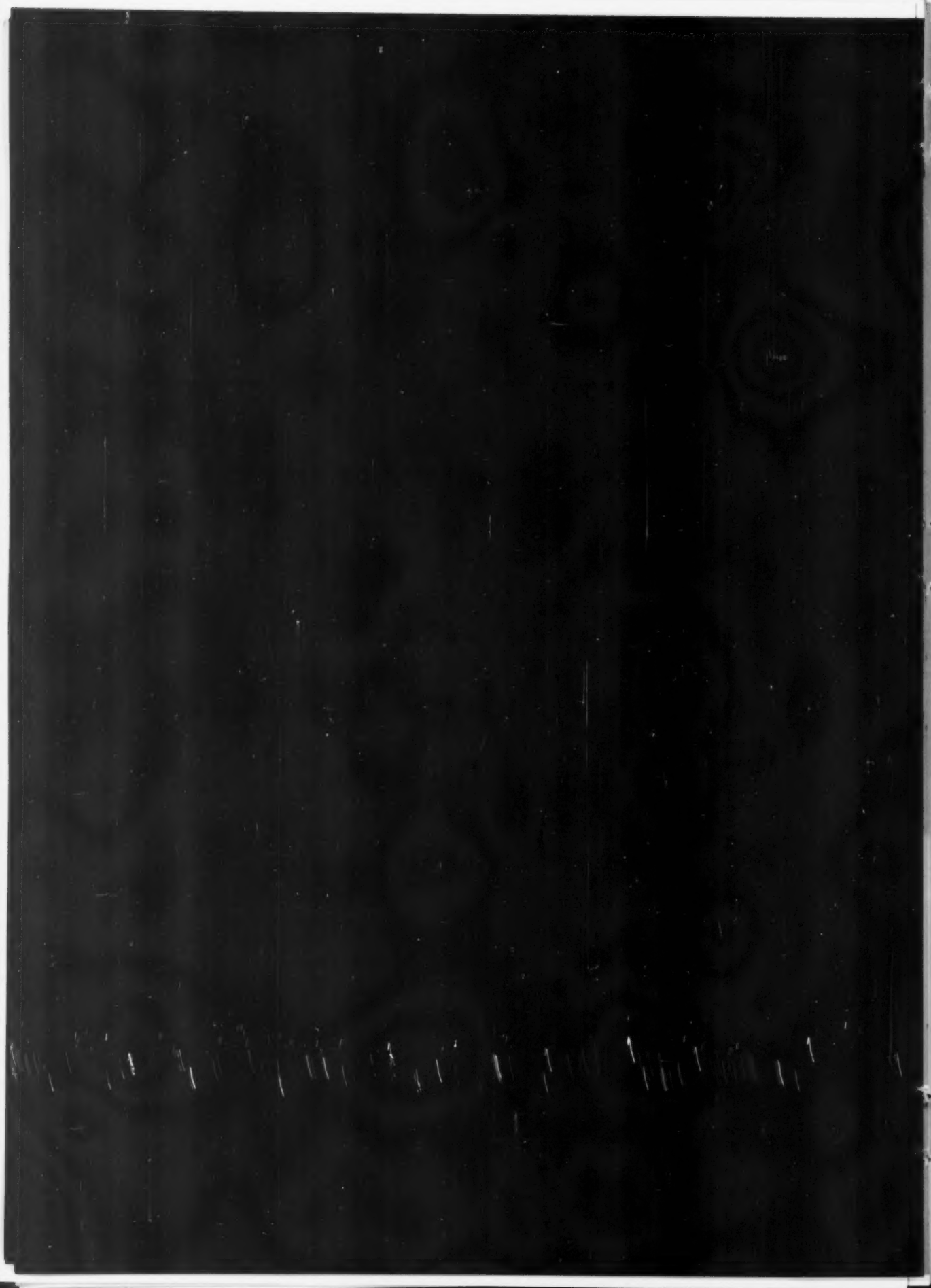
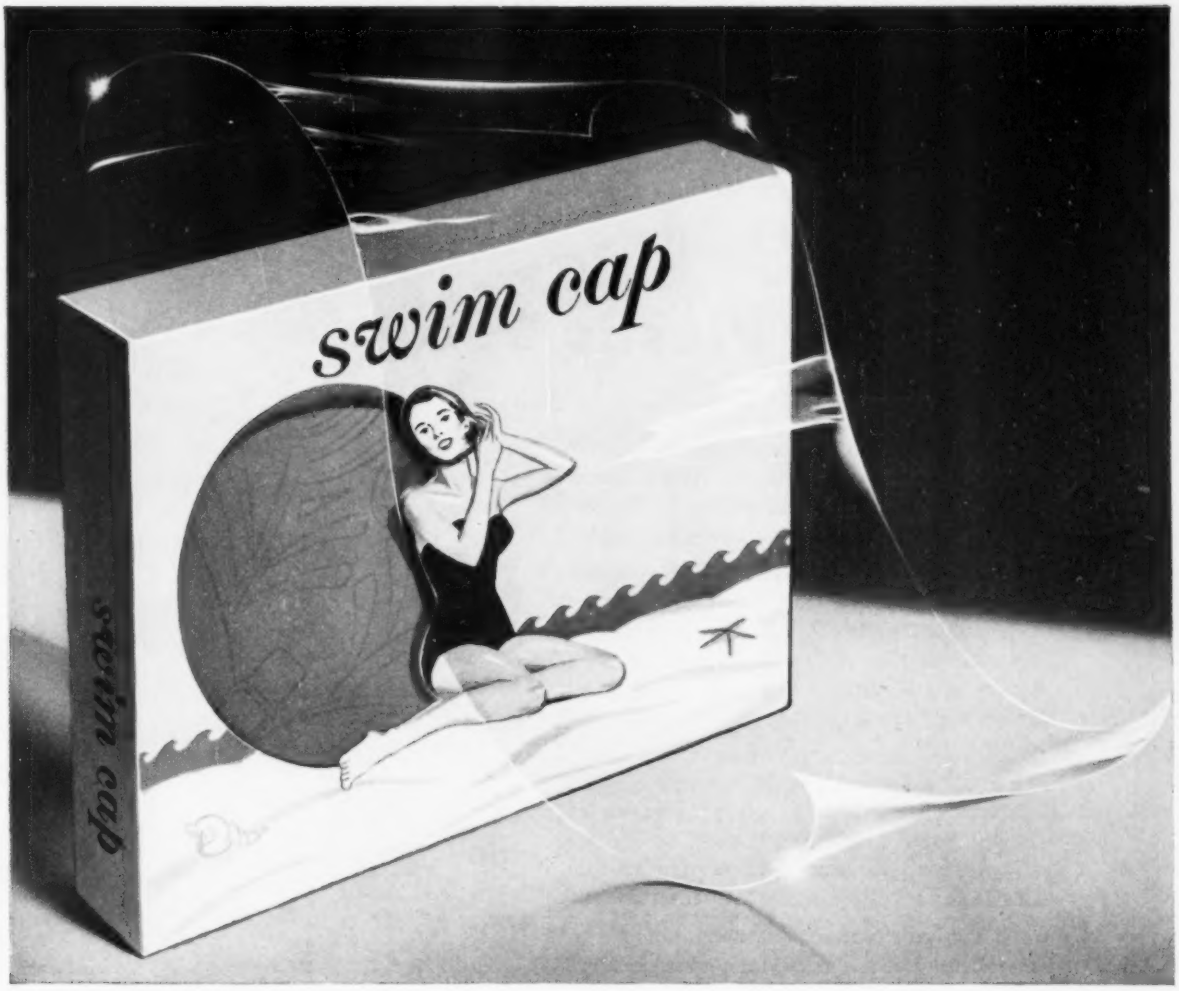




A layer of Acetate makes the *Glamorous* difference!

A surface layer of acetate transparent film works eye magic! Color comes alive . . . printing stands out . . . open windows gain protection, and keeping quality triples.

The plainest package sparkles with sales appeal!

Ask your supplier about laminating with acetate—the most effective single improvement you can give your package. Celanese Corporation of America, Transparent Films Dept. 108-H, 290 Ferry Street, Newark 5, N. J.

Canadian affiliate, Canadian Chemical Company, Ltd., Montreal and Toronto.

Celanese*

*Reg. U. S. Pat. Off.

PACKAGING FILMS

there's lure in

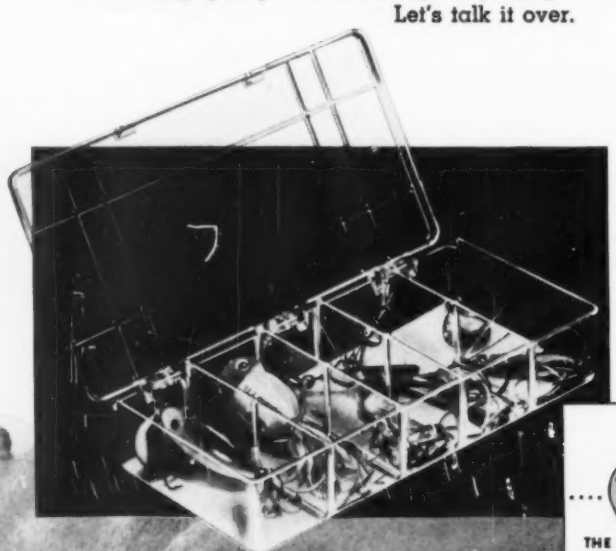
VLCHEK Plastic Boxes

Containing five colorful Fred Arbogast Spinning Lures plus an Arbogast Nylon Leader, this handy pocket-size, plastic box is both package and point-of-sale display.

How this crystal-clear box shows the contents to advantage! How it sells the product in multiple units!". . . its main advantage," according to the Fred Arbogast Company, "is the way it attracts the eyes of fishermen when they see it on their dealers' counters."

Not only in the case of lures, but also in that of foods, drugs, small mechanical parts, cutlery, hardware and many others, Vlchek Plastic Boxes display and sell to advantage. We help the users by suggesting the kind and size of package which will best serve them.

If you have a packaging need, perhaps we can help you put "lure" into your package. Let's talk it over.



"The ideal gift for the sportsman," advertises the Fred Arbogast Company, Inc., of Akron, Ohio.

THE VLCHEK TOOL CO.
PLASTICS DIVISION
3001 East 87th Street
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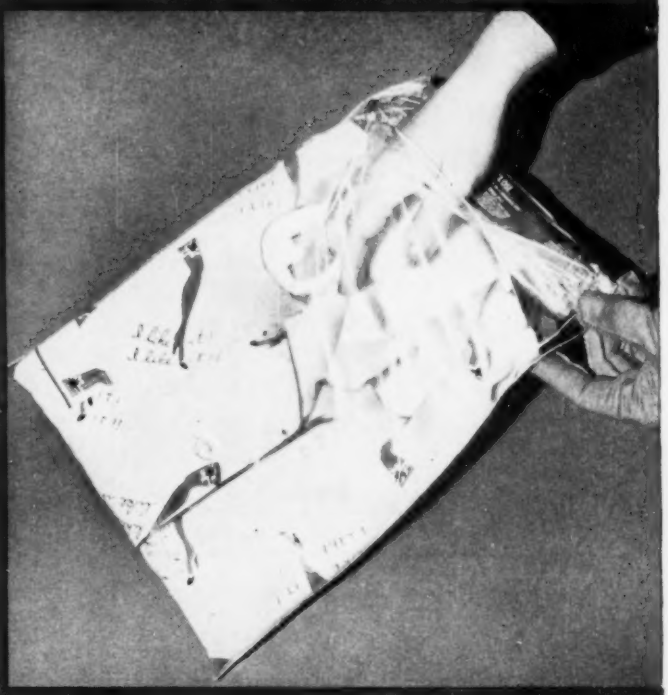
IN THE STORE—

IN THE HOME—



Bemis Flip-Close Bags sell your product... and keep selling it weeks and months afterward

A few of the Many Other Benefits of Flip-Close...

Customers can see and touch the merchandise without disarranging it or affecting the closure.

Dealers can put price tags *on the merchandise* without damaging the package.

Merchandise is protected from dust, dirt, shopwear; markdowns are minimized.

No special closing equipment or materials needed.

Shipping weight saved.

And... *they are economical.*

Other Sales-Builders in the Bemis Poly Family...

Bemis Tie-Top Bag—For baby shoes; combinations of booties, mittens, cap, etc.

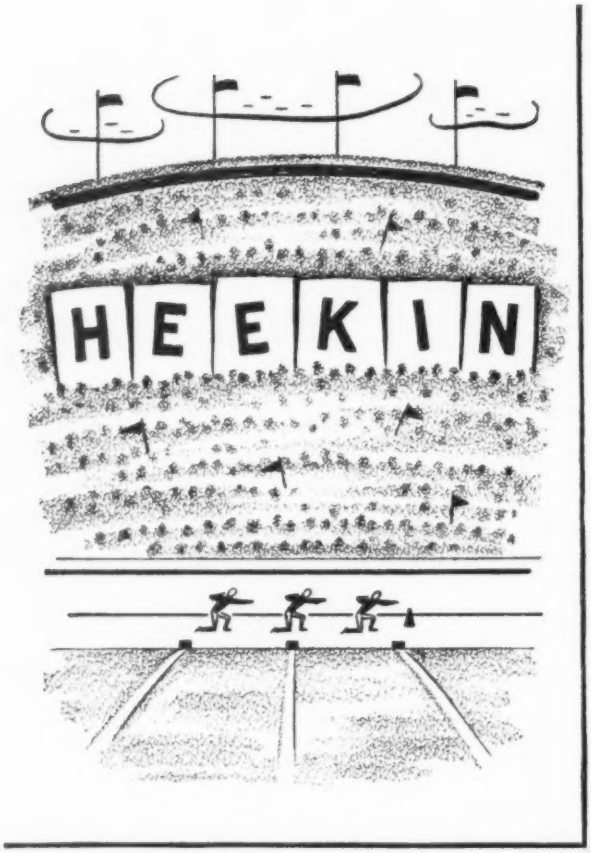
Bemis Flap Bag—For spreads, blankets, bed pads, pillows, drapes.

Bemis Double Pocket Bag—For related-item selling... handkerchief and tie; gloves and socks; sport shirt and swim sujt. A real sales builder!

Write for the complete story about Bemis Polyethylene Packaging for your product.

Bemis

BEMIS BRO. BAG COMPANY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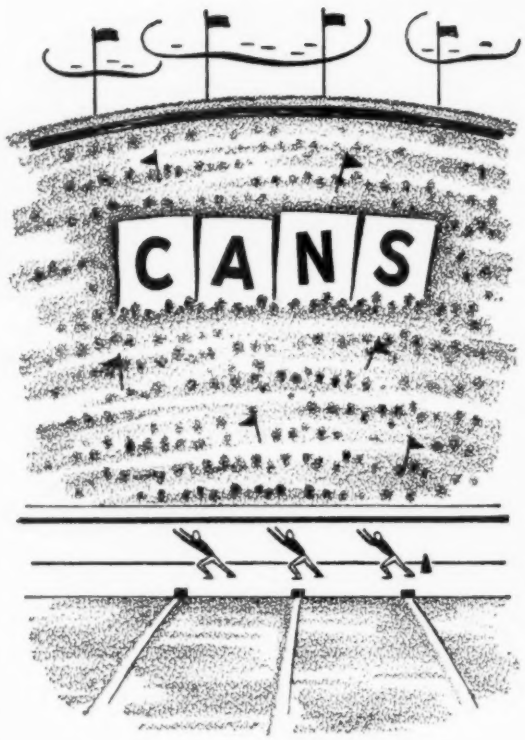
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THEY are uniformly strong, tough, dependable lightweight glass containers—high in chemical durability, accurate in dimensions, capacity and finish. They are designed to withstand the knocks of modern high speed production lines, handling and transportation.

Anchorglass containers are the result of practical engineered designs, careful selection and control of raw materials, uniform distribution of glass, precise temperature control in annealing and thorough quality control through laboratory tests and regular inspections.

If you package or contemplate packaging in glass let us send you sample containers with suitable closures for your particular needs. The services of our Package Engineering and Research Laboratories are also available to help you solve glass packaging problems.

Anchorglass® Wide Mouth Rounds are available in 25 sizes, with capacities from 10 cc. to 4000 cc., in amber glass. They are ideal, economical containers for dry drugs or chemicals, semi-solids or heavy liquids.

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GLASS CORPORATION
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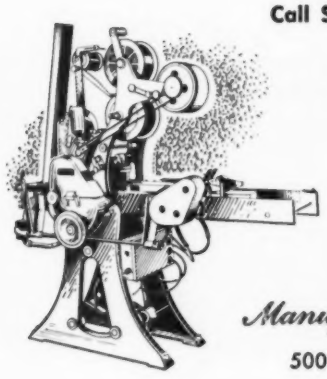
NEW KENTUCKY CLUB PACKAGE DEVELOPED ON SCANDIA MACHINES

Kentucky Club White Barley Pipe Tobacco wrapped in printed cellophane on Scandia High-Speed Automatic Wrapping Machines has more sales appeal and better protection than ever before.



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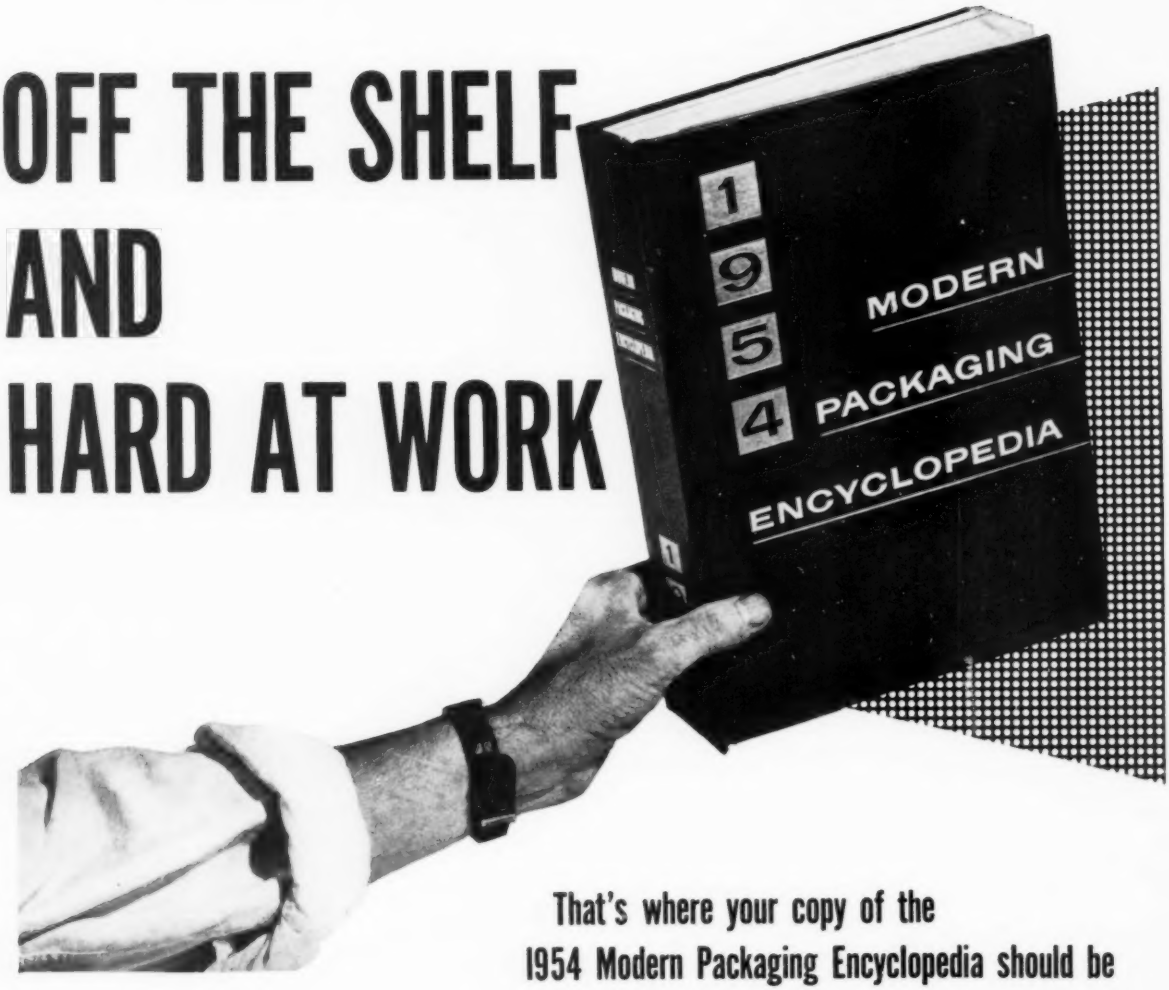

That's where your copy of the 1954 Modern Packaging Encyclopedia should be

The majority of the material in the Modern Packaging Encyclopedia is *work* data . . . information which most companies making or utilizing packaging can put to practical use, day-in and day-out.

This 758-page volume gives complete coverage to such important subjects as the characteristics of packaging materials and establishing package specifications. Packaging in paperboard, flexible and rigid films, metal and glass are discussed exhaustively, as are all important package decorating techniques. Of course, the principles for safe, economical packaging and shipping of industrial and military merchandise are explained in detail, too.

Don't Overlook The Helpful Packaging Charts

Important charts in the Encyclopedia summarize the properties of packaging films, aluminum foil and foil laminations. Another chart gives detailed characteristics of molded and sheet plastics that are used in packaging.

Countless hours of hunting for sources for materials, machinery, equipment and custom services such as contract packaging, laminating and container decorating can be saved by referring to the world-famous Directory Section. It is thoroughly indexed for fast reference. The many ads also help lead you to qualified suppliers.

On the shelf your Modern Packaging Encyclopedia does you no good; at *work* it can be one of your most valuable production tools. Use it often!

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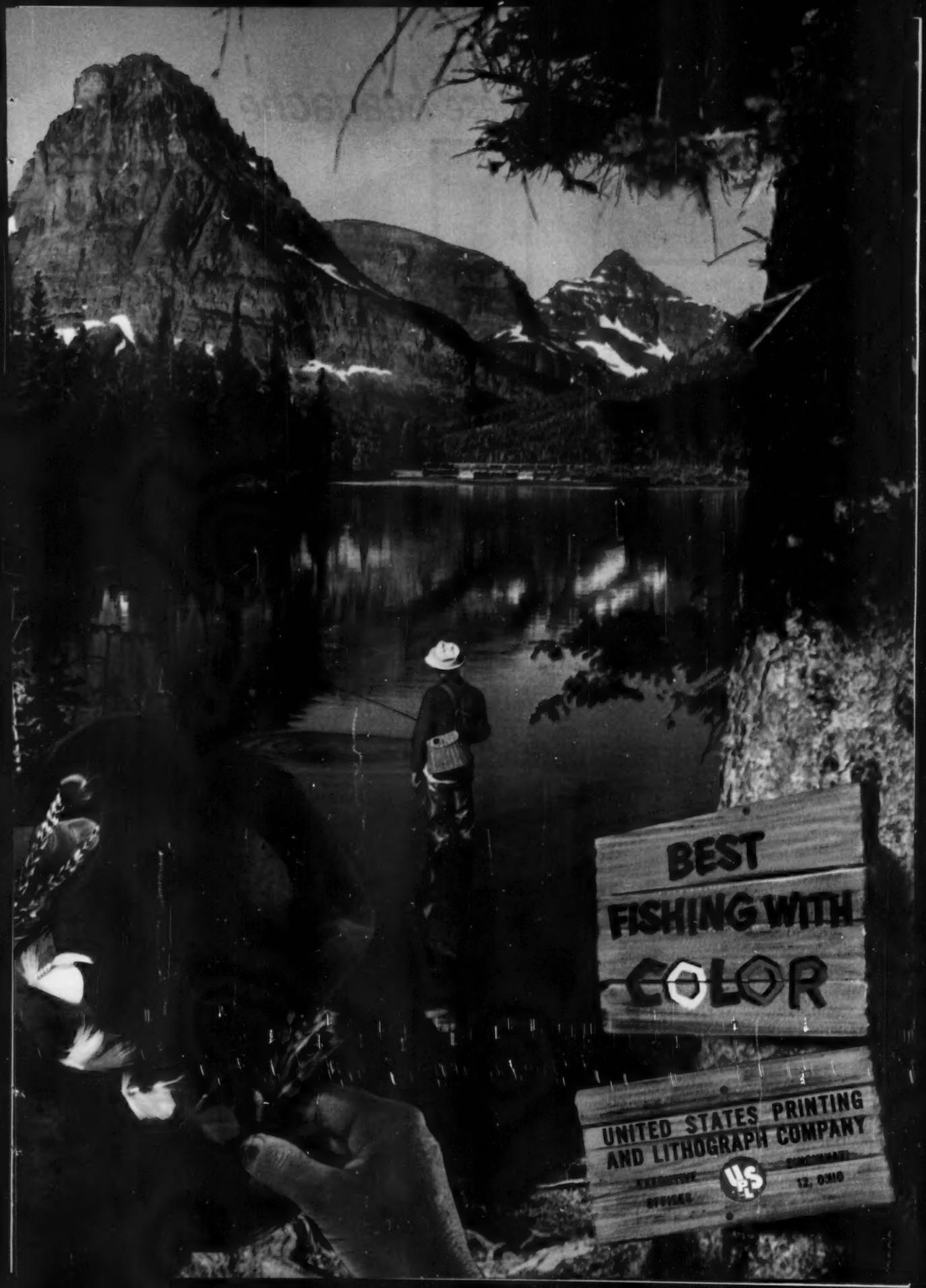
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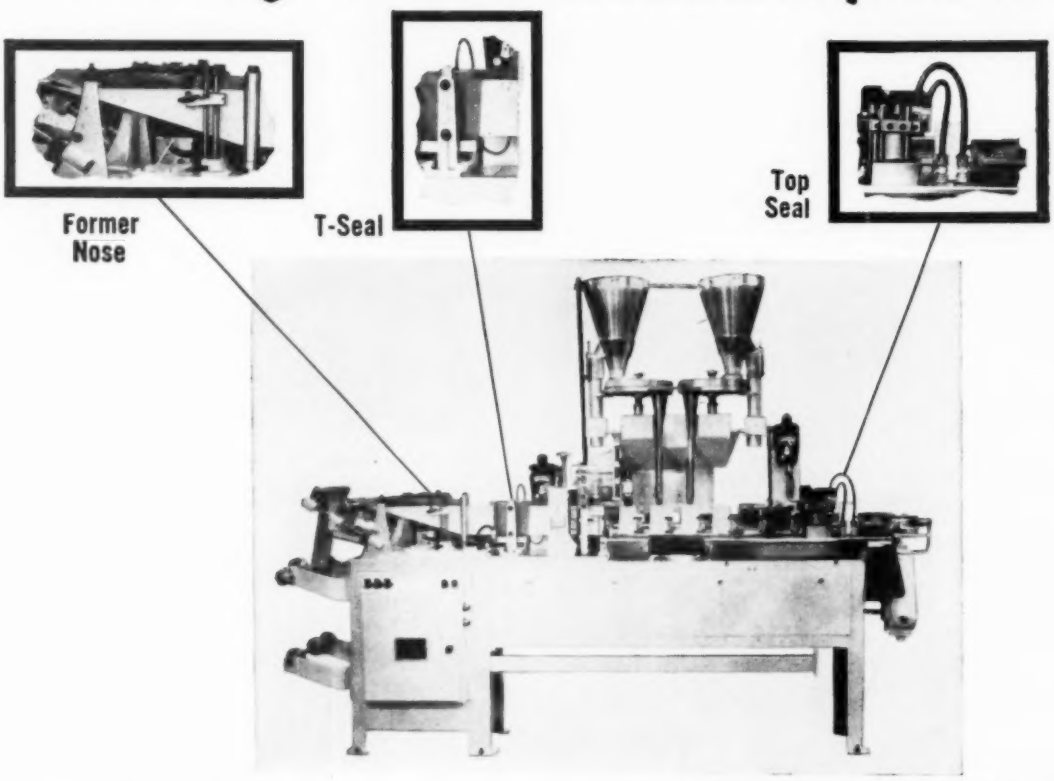

Glass fabrics coated with Du Pont TEFLON®
tetrafluoroethylene resin
assure trouble-free heat sealing

WHEN build-up of package coatings causes heat-sealing bars to stick on a machine that forms, fills, and seals thousands of packages a day, an entire production line is blocked while you clear away the tie-up.

One of the easiest ways to avoid the headaches that sticking bars can cause is to cover them with Du Pont "Teflon" tetrafluoroethylene resin coated glass fabrics. It's easy to clamp or lace a "Teflon" covering on sealing surfaces . . . and each quick installation will assure you of 3 to 4 days of trouble-free operation.

Losses due to downtime for cleaning the sealing surfaces, production halts, and improperly formed seals are cut to a minimum as your line rolls smoothly and efficiently.

"Teflon" coated glass fabrics boast a unique combination of properties that make them well fitted for this type of service. They are anti-adhesive and will not stick, resist heat and abrasion, are dimensionally stable, tough and sturdy. There are many packaging uses for these unusual fabrics. In sealing odd shapes—as in wrapping produce and meats—a cover of "Teflon" on hand-iron sealing elements keeps your output at its peak, besides eliminating the need to take time for cleaning the surfaces of the iron. Ask us for complete information on how you can adapt "Teflon" coated glass fabrics to your own specific needs. For full data and samples, write to

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Join the proud packagers
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that put their products
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Manufacturers of Fine Paper Boxes

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ARE POLY BAGS YOUR PROBLEM?

...Your answer is in the Bag with an automatic

Simplex **POLYETHYLENE BAG MAKING MACHINE**

Simplex Model 4-7 Automatic Polyethylene Bag Making Machine with Automatic Stacker-Counter-Sorter.

If you're troubled with start-and-stop bag production...excessive operator payrolls...waste of costly film...hard-to-open bags, or other polyethylene bag production problems, then it's high time you checked into the advantages of an automatic *Simplex* Polyethylene Bag Making Machine. Many of the exclusive *Simplex* advantages are listed here, but for a specific answer to your particular problem, please write to *Simplex* today. Give details on bag dimensions, bag uses, desired daily production rates, etc. Address Simplex Packaging Machinery, Inc., 234 23rd Ave., Oakland 6, Calif., Dept. M-8. Your problem will get prompt, expert attention and action.

Only *Simplex* Automatic Polyethylene Bag Making Machines Give You *All* These Advantages!

1. Eight hours of bag production from an eight hour shift!
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Can you afford not to investigate a Simplex?

Other Simplex models for cellophane bags...scrim and barrier bags and pouches...Simplex-O-Matic for automatic bag making, filling, weighing or measuring, and sealing. Write Dept. M-8 for details.

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BBD HYDROTEX FLEXOGRAPHIC INK

Maybe you have tried water-base inks before . . . maybe you use them now. In either case — if you are a flexographic printer of tissue, sulphite, kraft, bond, glassine, boxboard or any other paper stock — you should try BBD's new HYDROTEX INK.

Like other water-base inks HYDROTEX is economical to use because you thin it with plain tap water . . . is safe in the pressroom because it is non-inflammable . . . is just right for soft-finish, color-bright prints on gift and merchandise wraps; counter roll paper; notion, shopping and garment bags; shipping cases and floor displayers; clothing boxes; folding cartons; paper cups and containers; shelf and specialty papers.

But, *unlike* other water-base inks, HYDROTEX is 100% pigmented and unusually thin-bodied. Consequently, it has better working qualities and assures stronger, denser colors . . . greater opacity . . . cleaner, sharper impressions. Also, HYDROTEX dries quickly and without tack to a water-fast, light-fast finish with good rub resistance . . . may be thinned with alcohol or cellosolve when it is desired to increase or decrease drying time. It doesn't build up on rollers and plates, nor foam in the fountain, nor give off a disagreeable odor. Highly stable, HYDROTEX INK may be held in storage over long periods without losing its printability.

HYDROTEX INK is available in dense, opaque white and a wide range of brilliant colors for printing both white and colored stocks. Try it on that next job and see what excellent results it gives.

Ideal for all paper and board stocks because it features...

* *Economy in use*
* *Soft, matte-finish prints*
* *Pressroom safety*

plus

* *Low viscosity*
* *High color-strength and opacity*
* *Water-fastness*
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* *Good rub resistance*
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Useful reference book showing standard HYDROTEX INK colors printed in various combinations on tissue and bleached, natural and colored kraft. For a free copy write to Bensing Bros. & Deeney, 3301 Hunting Park Avenue, Philadelphia 29, Pa.

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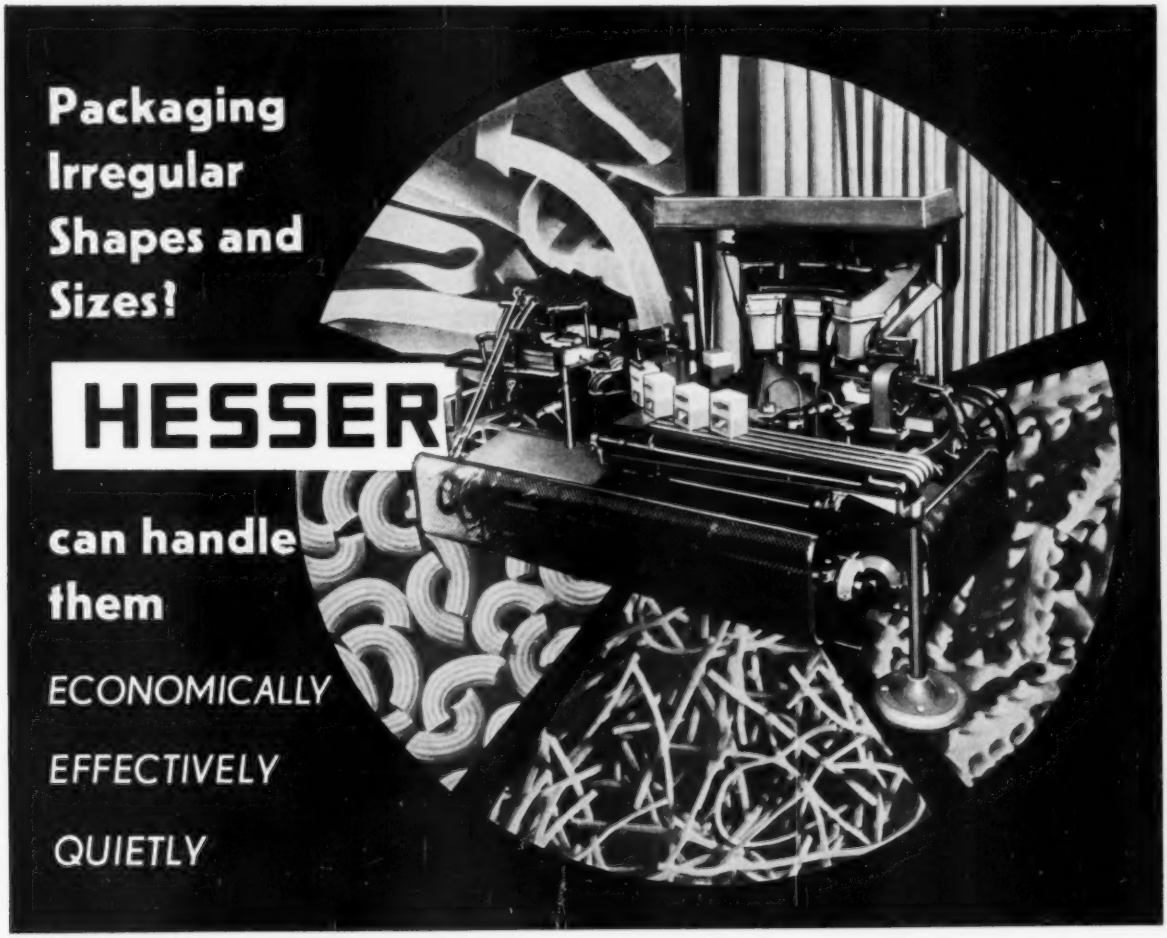

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- Special weighing devices for different products
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There's hardly a problem in packaging for which **HESSER** doesn't have an automatic machine, or an attachment, that will handle it effectively and at low cost. **HESSER** offers machines for the automatic weighing, packaging, wrapping of sugar, coffee, candies, soap and other powders, tobaccos, cigars, edible fats in tablet or cube form . . . foods of all varieties.

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HESSER makes a complete line of machines for weighing, wrapping, bundling, printing and packaging.

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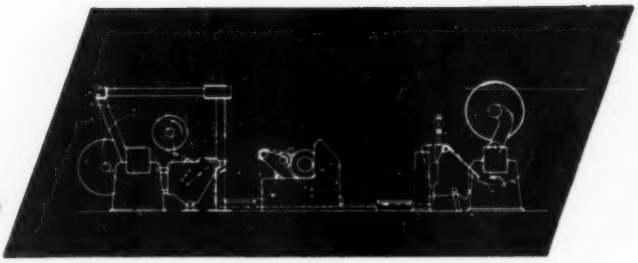

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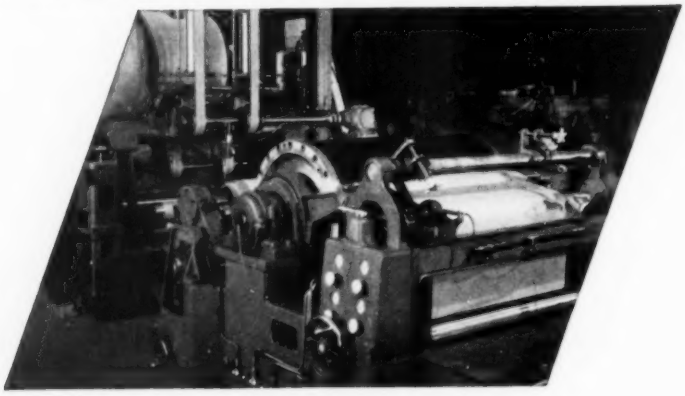

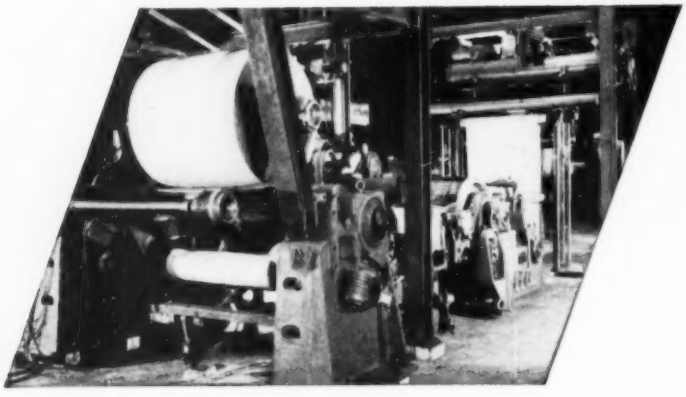

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The experience of the leading converters who offered their ideas and data to provide the optimum operating features in the laminator.

The experience of the leading extruder manufacturer whose equipment Dilts includes to provide you with a complete package installation.

The experience of Dilts—designers of high speed converting machinery and experts in continuous unwinding and winding equipment which is so essential to successful production on Polyethylene laminators.

Model PL-1000 shown for operation to 1000 FPM; also available, Model PL-400 for operation to 400 FPM. Write for further details.

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TAPE that sticks in freezing cold

Tough, moisture-resistant tape that sticks at a touch . . . holds tightly to wax, or plastic treated papers . . . even at extremely cold freezer temperatures! Available in 12 attractive colors to match or contrast with printed cartons or wrapping papers. For complete information, and free sample, write on your letterhead to Dept. MP-84.

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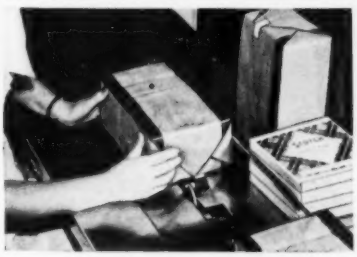
LOOK what you can do with it!

SECURE PACKAGING for cold cabinet displays is easy with "Scotch" Brand Tape No. 710. Hams, bacon, meat cuts, etc., are attractively wrapped with this tight-sticking tape.

EYE-APPEAL can be added to combination "deals" with "Scotch" Brand Acetate Fibre Tape *in colors*. Here, wax-treated cartons are banded together for cold cabinet displays with a "Scotch" Brand Package Bundler.



FASTER WRAPPING of ice cream packages is accomplished with "Scotch" Brand Tape No. 245 and a "Scotch" Brand Box Sealer. Package is simply passed over roller; pre-determined length of tape is automatically applied.

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PLASTIC FILM

Plastics Division
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For Packaging Everything From Bacon to Blankets!

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Conveyor synchronized bottling line which includes a Pneumatic Rota Cleaner, Rotavac-18 Filler, Four-Head Capper and Direc-Transfer Labeler, at Gulden's plant in New York City.

Millions prefer this mustard—

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GULDEN'S Prepared Mustard has been "pepping up" good food for a good long time. It has established its name, its quality and its worth beyond question.

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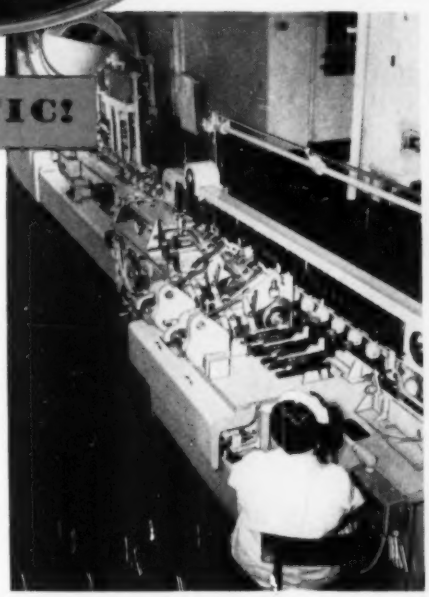
Look to PNEUMATIC — as other leaders do — for "lower cost per container".



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The versatile STRETCHRAP adds buy appeal to your products by protecting them in sanitary, airtight Pliofilm. Moisture loss is reduced, as is spoilage or handling damage. At speeds to 15 per minute, one operator packages odd shapes and sizes in an eye appealing, tight, wrinkle-free "skin" on the improved STRETCHRAP.

In a recent test, a STRETCHRAP package outsold several others by 8 to 1 . . . can you afford not to STRETCHRAP your products? Write today for complete details.

*STRETCHRAP—T.M. Stokes & Smith Co., Philadelphia, Pa. PLIOFILM—T.M. The Goodyear Tire and Rubber Co., Akron, Ohio.

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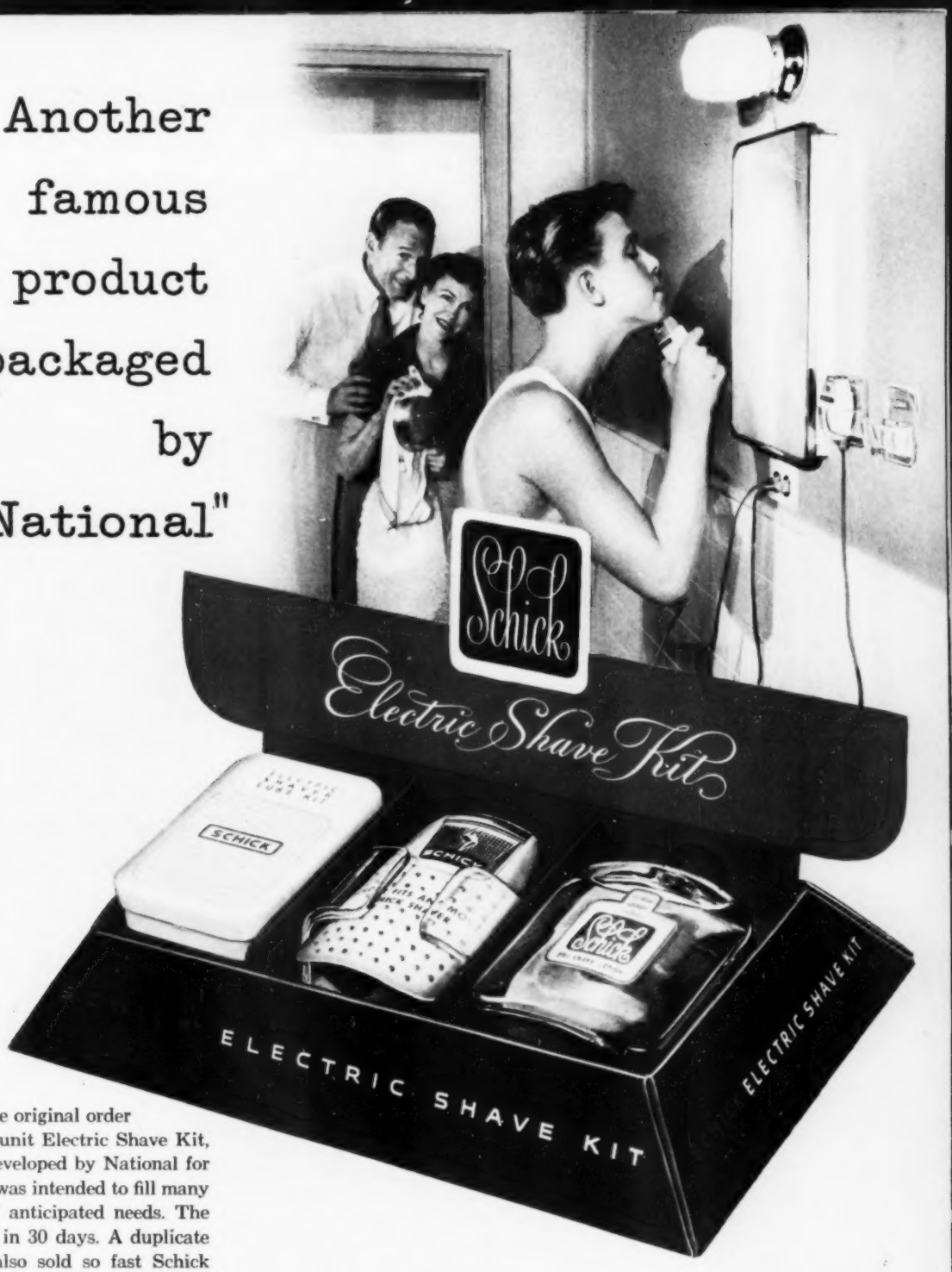
TRADE MARK

Another famous product "packaged by National"



The original order for this three-unit Electric Shave Kit, developed by National for Schick, Inc., was intended to fill many months' anticipated needs. The kit sold out in 30 days. A duplicate order also sold so fast Schick was left without a single set well before Christmas.

Perhaps National imagination and ingenuity can help you achieve similar packaging success.

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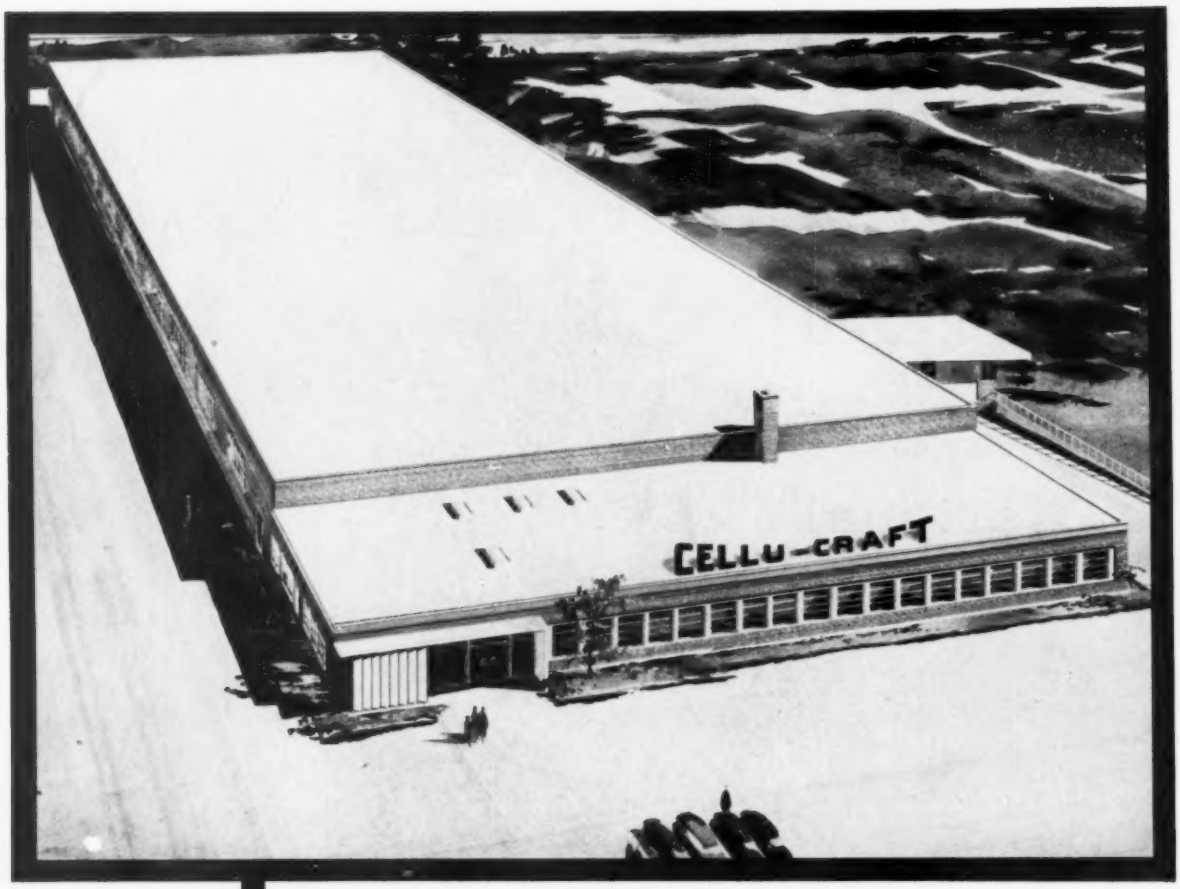

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...is the child of success!

Another new plant, encompassing an area of 93,000 square feet, dedicated to the designing, converting and color printing of flexible packaging materials.

A plant equipped with the machinery and skill necessary to solve any packaging problems.

The plant proudly bears the name Cellu-Craft – a name representing the ultimate in transparent packaging specialization geared to low cost production.

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Satisfaction rests on the carton

Every working day of the year sees tens of thousands of Union Corrugated Shipping Containers deliver famous brands to food outlets all over the United States. Lever Brothers Company, New York, is one of the leading manufacturers who specify these dependable boxes. Follow the lead of hundreds of the country's biggest shippers and talk to the man from Union—soon.

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There are 3 sides to our story

Yes, the story of Hazel-Atlas Food Containers is certainly a three sided one.

First the top, a smart lithographed cap, with a plug for other products or a recipe, starts the sell. Then comes the well designed show window sides, glistening display cases with complimentary label space. And then at the bottom, seldom seen by the consumer, is the H-A trademark on the sturdy base.

What does this H-A mean to you? It means the best available service in glass from a Hazel-Atlas sales office or factory near you. It means the best in production line efficiency and easy handling. It means the best in design for sales, design that always incorporates consumer wishes.

That is why H-A means Home Approved.

Hazel-Atlas Glass Company
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A CASE HISTORY...

PYROXCOTE

SOLVES STILL ANOTHER PROBLEM

World famous Treasure Cave Cheese—from Fairbault, Minnesota—arrives at your table and on millions of others in prime condition—thanks, in part, to the package . . . a Pyroxcote Case History. This beautiful foil-paper wrapper is printed and coated with PYROXCOTE Transparent Foil Lacquer for the Treasure Cave people by the Rapinwax Paper Co., of Chicago and Minneapolis. RESULT . . . a package which is glossy, abrasion resistant, water vaporproof and water shedding, resistant to fats and oils, heat sealing, and mighty good to look at. Perhaps you have a potential "case history" awaiting the use of PYROXCOTE coatings and PROXMELT* heat sealing adhesives and laminating compounds. We'll be glad to explore with you how to adapt our products to your packaging requirements—or those of your customers.

*T. M. REG. U. S. PAT. OFF.

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A vital drop in the basket!

Certainly this "drop in the basket" is the final, acid test of a product and its package! The sale is made—a long chain of marketing operations has reached a successful end.

Naturally, you expect every link in this important chain to carry its load. Especially packaging. Your package *must* support the hard work, the promotion and investment behind it! Your package must dramatize your product's sales appeal!

Gardner stands "at the ready" to help you in every phase of effective package design and development. The promise of 54 years' experience in quality package production is no myth at Gardner—over one-half of Gardner's package technicians have worked with us for fourteen years, many twenty-five years and more! This skill and experience can be yours for the inquiry. See how the Gardner representative can help you! Write or phone today!

Many of America's greatest products go to market in "Cartons by Gardner"

GENERAL OFFICES: Middletown, Ohio—PLANTS: Middletown, Ohio; Lockland *(Cincinnati)*, Ohio
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THE GARDNER BOARD AND CARTON CO.

Manufacturers of Folding Cartons and Boxboards

FROM THE GARDNER GALLERY OF FAMOUS AMERICAN PACKAGES

Speaks for the product —

NASHUA Printed Wraps

ONE GLANCE at a Life Savers carton wrap and the dealer or distributor can identify the flavor. Colored wrappers and Nashua's cleanly-printed waxed paper make both product selection and control of stocks easy.

In addition to good display at the retail-level, these carton wraps give the contents all-around protection. A more flexible film of wax on the outside of the wrapper prevents cracking on corners or where sheets are folded.

Write for samples of waxed wrappers designed and printed by Nashua for Life Savers Corp., and other leading packagers. Tell us your problem.

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MODERN PACKAGING

August 1954, Vol. 27, No. 12

Single-portion packages

They're broadening out to cover both institutional and home markets, their convenience and economy offering new appeal to many food items

Open a single-portion package and serve yourself!

More and more of us are doing just that these days, thanks to the steadily mounting popularity of this type of packaging for a variety of food products. The use of single-service packages has to date made its greatest progress in the institutional-feeding field, but the home front has already been invaded on a minor scale and further progress may be expected in this direction as housewives find single-portion containers the solution to many of their food-preparation problems.

From time to time, MODERN PACKAGING has called attention to the basic unit-packaging trend, not only for certain types of food products, but also for pharmaceuticals, cosmetics and many other kinds of items for which it is often more convenient to employ an easily handled unit-of-use package than to remove the required quantity from a larger package. In an earlier survey article[1] the important point was made that some of the newer films and laminations, augmented by improved automatic equipment, have opened up additional fields for unit packaging that were not practical only two or three years ago. Single-portion foods represent one of these new fields.

Of course, single-portion packaging even in the food field is not entirely new. Wrapped, individually identified cubes of sugar have long been a familiar sight in restaurants and on lunch counters. More recently, single-portion packages of popular breakfast foods have gained wide acceptance in the institutional field and have also proved popular for home use, permitting waste-free individual servings of the variety favored by each member of the family. Not so many years ago, a patron ordering soup or chili at a lunch counter received it with several loose crackers whose freshness might be open to question; today, by way of contrast, he is given a neat, cellophane-wrapped serving of crackers, sealed to insure freshness and also plainly identified as to brand.

The institutional field

What is it about single-portion packaging that appeals to hotels and restaurants, airlines, hospitals and other institutions engaged in mass

PHOTO COURTESY CAFE PAK, INC.

MORNING COFFEE for the motel guest, right in the room, is provided with this ingenious combination package. Envelopes containing powdered coffee, powdered cream and sugar are packaged between the inner and outer lids of "hot cup." Their contents, plus hot water from the bathroom tap, make an instant hot "eye opener" for travelers.

[1] See "Upswing in Unit Packaging," MODERN PACKAGING, Sept., 1953, p. 89.

COLOR PLATE COURTESY KRAFT FOODS CO.

LATEST FOR KRAFT is maple-flavor table syrup in a 1¾-oz. jumbo P-C—just the right table serving for a stack of wheat cakes, doing away with wasteful and sticky syrup pitchers. Highly successful in the institutional field, Kraft is now considering P-C's for consumer market.

feeding operations? Basically, this packaging approach assures fresh, sanitary foods; simplifies inventory problems; curtails waste; saves labor and often cuts down on the time of preparation required to get the product ready for the table.

Unopened single-service portions need not be discarded, but may be reclaimed and served to other patrons. Frequently, pre-packaged single-service portions actually speed up the preparation of the item for the table and enable the restaurant to offer improved service. Perhaps most important, they provide the food-serving establishment with a degree of portion control almost impossible to attain when working with larger packages. Uniform servings are assured and exact cost records easily kept.

The magnitude of the field may be appreciated from the fact that the nation's restaurants serve an average of 70 million meals daily.

Single-portion packages offer an excellent promotional opportunity to the food manufacturer in that they make it possible for his brand name to be carried all the way to the table. There is nothing more anonymous than a bowl of sugar or a shaker full of salt—but seal the products in printed single-portion packets or wrappers and they immediately take on individual indentity which has important promotional benefit for the manufacturer.

How effectively these wraps may be tied in with the appearance of the regular retail package, to insure immediate recognition of the package on the store shelf, has been illustrated

PHOTO COURTESY KRAFT FOODS CO.

PORTION CONTROL is key to the success of Kraft's P-C's, which stimulated the trend to single-portion foods. Jellies and jams in a wide range of flavors are packaged in ½-oz. formed vinyl cups sealed with sheet of film, imprinted with flavor. These go right to the dining table and the unopened containers can be re-used, eliminating waste.

recently by the Jack Frost sugar cube wrap,[2] which exactly duplicates in miniature the design and shape of the consumer carton.

Today's food producer, having at his fingertips a wealth of materials and techniques to make unit packaging mechanically and economically feasible, cannot afford to overlook the merchandising opportunities inherent in this new packaging trend.

Speaking for the mass-feeding field, *Institutions* magazine recently commented:

". . . These individuals, wearing the trim uniforms of well-designed personalized packages for patrons, are hastening the cadence of production and service. They and others like them represent one of the most influential modern trends in the food service field—a trend to an individualistic approach which gives each patron assurance of complete cleanliness and attractive presentation . . .

"Arrival of an increasing number of pre-portioned products which can be placed directly before the patron signifies not only that labor costs can be lowered. It also signifies that some of the 'little' details which often occupy food-service budget space can be cut down. Savings here mean better service elsewhere. These products also signify possibilities for expansion of service. When dangers of spillage, inefficient handling and spoilage are minimized by individual portions packaged by the processor, food service operations can safely move into difficult areas such as the galley of an airplane or even serve meals in an institution without food-service facilities."

The growing home field

While the institutional field offers intriguing opportunities for single-portion food packaging, alert manufacturers also realize that the home field should not be overlooked. Today's housewife is just as interested as is the corner restaurateur in serving attractive, healthful meals with a minimum of preparation time. If single-portion packages can help her attain that objective without putting an added strain on the budget, she is certain to give them a trial.

Frozen fruit juices provide one example of how a type of single-service package originally adopted for institutional use has found its way to the retail-store level. Late in 1952 Walgreen Drug Stores introduced Pasco single-service units of frozen orange-juice concentrate, consisting of a cellophane-polyethylene bag containing sufficient concentrate to produce a 10-oz. glass of orange juice. Use of the individual bags[3] eliminated the customary cutting and squeezing of oranges, with its attendant waste, and enabled patrons to be served almost immediately after giving their order.

This package now finds its consumer counterpart in Sunkist's new 1-oz. cellophane-polyethylene bag of frozen whole lemon juice, which makes possible the use of pure fresh juice for seasoning and flavoring without opening a larger container or keeping fresh fruit around to spoil.[4] Eight of the 1-oz. Sunkist single-portion packages are packed in a waxed-paper-wrapped carton which is sold directly from the refrigerated food case in retail food outlets. The field appears wide open for development of other frozen-juice or concentrate packages of the single-portion size, particularly in view of the large amount of low-temperature storage space afforded by modern refrigerators and home freezers.

Individually packaged portions of

[2] See "Jack Frost in Miniature," MODERN PACKAGING, Feb., 1953, p. 109.

[3] See "Orange Juice in a Bag," MODERN PACKAGING, Sept., 1952, p. 110.

[4] See "Lemon Juice by the Ounce," MODERN PACKAGING, July, 1954, p. 142.

PHOTO COURTESY AMERICAN HOME FOODS.

MEAL FOR ONE is being promoted by Chef Boy-Ar-Dee with these 8-oz. cans designed to be heated and served at food bars just like canned soups.

PHOTO COURTESY SYLVANIA CELLOPHANE.

SAUCES OR JELLIES for one now come in transparent film envelopes. Practicability of packaging liquids and semi-liquids in polyethylene-cellophane material has greatly broadened single-service possibilities. Sealing envelope to form contents into shape of jelly glass or ketchup bottle—with contents showing through non-printed areas as they would through glass—adds interest and identity to product.

PHOTOS COURTESY GENERAL FOODS.

CONVENIENCE and space economy are important to airlines, who have done much to spur single-portion packaging. Here a Frontier Airlines hostess is shown making a cup of coffee from a foil unit envelope of Instant Maxwell House. Many of the airlines now carry a single tank of hot water from which, with powdered unit products, they may serve either coffee, tea, Sanka, chocolate or bouillon, as desired.

LARGER SCALE of portion packaging is represented by these popular institutional packs. Larger envelope of instant coffee represents one filling for 2½-gal. urn; smaller size is sealed to glass coffee-maker.

jams, jellies, syrups, etc., offer additional merchandising opportunities in both the institutional and retail food fields. Kraft Foods Co. pioneered this type of single-portion packaging with its Kraft P-C (Portion Control) Pack,[5] consisting of individual formed rigid vinyl containers, sealed with transparent plastic film, holding one-serving portions of grape jelly, apple jelly, orange marmalade, strawberry jam, currant jelly and cranberry sauce. These containers were designed to meet the needs of the institutional field in low-cost, labor-saving inventory control, quality and sanitation. Now produced and filled on automatic equipment at the company's Chicago and Garland, Tex., plants, the P-C packs may soon be manufactured in other Kraft plants as demand for the unit servings continues to increase. Although thus far used only in the institutional field, the P-C packs and the techniques involved may eventually reach the consumer field as well, the company believes.

In addition to the standard ½-oz. sizes, the Kraft jellies and jams are available in 1-oz. sizes for room service in some larger hotels as a special item. Honey and cranberry sauce are packaged in ¾-oz. sizes, while table syrup, newest addition to the line, is packaged in a rectangular container holding 1¾ oz. (liquid measure). In parts of the Southwest, Kraft is currently testing the single-portion packs for ketchup. P-C's are packaged by Kraft 20 to the container for easy handling by food-serving establishments and are delivered in quantities of 10 containers to the shipping carton.

The new trend in envelope-type single-portion packages for liquids and semi-liquids is typified by the "Pitcher-pour" single-service envelope for cane-and-maple table syrup, recently introduced by Holbert Bros., Onamia, Minn., and previously described in these pages. Of laminated cellophane-polyethylene construction, this unit is so designed that the pocket containing the liquid product is shaped like a pitcher and the impression is heightened by the printed design. In addition, the use of an unusual gusseted bottom seal on the envelope enables it to stand upright, like a pitcher, on the table. A corner tear provides the pouring opening, located right at the spout of the "pitcher."

Single-portion servings of jelly, ketchup and mustard are among the food items being produced by a Cincinnati custom packager under its own name and also privately labeled for use by various firms offering carry-out or tray service of foods. Utilizing equipment of its own design, this company fabricates and fills the sealed, envelope-type packages of polyethylene-coated cellophane. The cellophane, which forms the outer surface of the package, is imprinted, similarly to the "Pitcher-pour," with a symbolic design such as a jelly glass,

[5] See "Portion Control," MODERN PACKAGING, April, 1952, p. 90.

mustard jar or ketchup bottle, through which the product itself may be seen. This company, believing that a large hitherto unexploited market exists for unit packs of this type, has developed production methods which make relatively short runs economically feasible. Printing used on the packs is of the flexographic type.

The same organization has been carrying out extensive tests of similar packages for such products as tartar sauce, "spare rib" sauce, barbecue sauce, mayonnaise, etc. In working with "sensitive" products highly subject to fermentation, oxidation, moisture loss or mold, special precautions are taken to exclude airborne organisms which might hasten spoilage.

A means of market testing

A point frequently overlooked by food manufacturers is the fact that single-service packets offer one of the most economical means of getting a product before the public to test market reaction without becoming heavily involved in packaging materials and equipment. The services of a well-equipped custom-packaging organization will often be found invaluable in handling initial production, leaving the manufacturer free to concentrate on marketing and advertising plans.

Chun King Sales, Inc., Duluth, Minn., utilizes a flat, rectangular, heat-sealed, polyethylene-coated cellophane envelope for its ½-oz. individual servings of soya sauce. The package, which is opened by tearing across the top to expose the non-spill type of spout for convenient dispensing of the product, is imprinted with the product name, list of ingredients, weight notation and Chinese-style lettering for Oriental atmosphere.

Seasonings which are customarily used directly at the table in small quantities are a "natural" for single-service packaging. A variation on the granulated sugar packets and wrapped sugar cubes is the new tubular type of cellophane pack for granulated sugar combining unusual display appeal with ease of dispensing.[6] The tubular pack lends itself to easy and accurate dispensing of the sugar and can be kept from spilling remainders by folding over the end.

Measured quantities of salt and pepper in individual-service packets, which first found popularity in airline service, are now being widely adopted in the institutional field, particularly for drive-in restaurants and for hospitals and various other organizations having tray-type food services. It is interesting to note that important brand names are now appearing more frequently on these packages, taking them out of the anonymous category.

Among the major producers active in this field is Diamond Crystal Salt Co., whose handy sealed salt packets are now being used by approximately 10,000 restaurants and drive-ins, as well as hundreds of hospitals. These packets are of patented construction, incorporating four small paper tubes, formed as corrugations, in which the salt is packed and sealed on automatic equipment. Near the upper end, the tubes are lightly scored so they may be broken open to dispense the product. By holding a finger over one or more of the tubes, the patron can closely control the amount of salt or pepper dispensed. Durkee uses the same type packet for black pepper.

The Diamond Crystal unit packs are also sold through retail food stores to consumers in a cellophane-wrapped tray containing 24 of the inexpensive dispensers. They are convenient for informal entertaining, barbecues, picnics and other outings, as well as for lunch-box use.

Single-service salt and pepper containers save time and labor for restaurants by eliminating repeated washing, filling and handling of shakers, provide instant seasoning service without meal interruptions and eliminate costly replacements caused by breakage and pilferage of shakers. Moisture resistant, the packs prevent annoying caking of salt and insure trouble-free dispensing. Each unit contains sufficient salt or pepper for a complete meal.

Molded transparent polystyrene containers also appear destined for use in the "miniaturization" program involved in the swing to single-portion packages. Such a container, in 1-oz. size and sealed by means of a snap-on polyethylene lid, has been developed to the final experimental stage by an organization which plans to market one-serving portions of fresh-fruit jams and jellies, selling them to hotels, restaurants, institutions, etc. From the production standpoint, small containers fabricated by heating and vacuum forming thermoplastic sheet materials are also of interest to this field, since this method offers interesting production economies in low-cost tooling and equipment.[7]

Individual servings of ice cream, introduced within the last few years, have brought speedier service and cost-saving portion control to the drugstore soda fountain, 'long the

[6] See "Tubed Sugar Service," MODERN PACKAGING, April, 1954, p. 102.

[7] See "Vacuum-Formed Plastics," MODERN PACKAGING, Feb., 1954, p. 108.

SEALED PORTIONS of crackers and wafers are now the rule in most restaurants. Ry-Krisp benefits from promotion of its name; restaurant benefits from protection of crispness, sanitation and no waste.

scene of frantic dipping and wastage at peak patronage periods. Pioneered by Arden Farms in California with its "Diced Cream" in an easily opened miniature paraffined carton,* these single-service packages insure that each customer receives an equal serving. Valuable clerk time is saved and the store is able to maintain accurate cost and inventory records which insure profitable ice-cream sales.

The one-portion ice-cream packages, which are now available in several forms, are not limited to institutional use, but have also proved popular as a retail item, sold through drugstores and retail food outlets. Such packages save time for the housewife, insure uniform portions for all and enable each guest to have a choice of flavors.

PHOTO COURTESY PLASTIC CONTAINERS CORP.

NEW ENTRY in single-portion field is this stock 1-oz. molded polystyrene cup with tight-sealing polyethylene lid. It is designed for jams, jellies, etc.

In this weight-conscious era, Ralston Purina Co. has long promoted its Ry-Krisp crackers as one way to cut down on the calories painlessly. One of the company's newest efforts in this direction is the introduction of Ry-Krisp Individuals—double-square rye wafers sealed within a printed cellophane overwrap carrying the familiar checkerboard motif. Also printed on the wrapper, in white script letters, is the statement, "Only 20 calories per wafer," which brings the product's strongest sales feature directly to the diner's attention. The new pack, the company points out, makes for faster service in food-serving establishments, providing just the right amount for an individual portion. It is also economical, saving time and labor, eliminating waste and loss from breakage, and providing accurate portion cost control.

"Your customers," states Ralston Purina in an ad addressed to the food service field, "recognize Ry-Krisp as the prestige wafer served with soup, salad, cheese and bread varieties . . . the cellophane pack as the symbol of freshness and cleanliness." The new Ry-Krisp Individuals are packed 180 packets to a 4¾-lb. printed caddy.

The beverage field

Sealed, single-service envelopes of cocoa mix, in use for several years, have greatly simplified the preparation of this popular cold-weather drink for restaurants, drugstores and lunch counters. Combined with milk or water and heated, the measured contents of these packages insure uniform preparation of the beverage and also provide accurate portion control. Heat-sealing foil or paper is ideal for this kind of package, which up to the present time appears to have made much greater progress in the institutional field than as a retail-food-store item.

With the perfection of soluble coffee, several producers have recently introduced single-portion packages for this most popular of American beverages and have aimed at the home as well as the institutional market. G. Washington's coffee, a product of American Home Foods, Inc., is now available to food-serving establishments in individual 2-gm. heat-sealed foil packets whose contents, combined with hot water, produce exactly one cup of delicious coffee. For institutional use, the G. Washington's "Aces," as they are called, are packed 100 to a counter display carton. Twelve of the packages, highlighting a steaming cup of coffee on the front panel, are also available through retail food outlets packed in a window-style folding carton. This consumer package is especially suited to picnics, camping, foreign trips, etc., where regular coffee brewing facilities are frequently not available.

Other efforts along this line by American Home Foods include the G. Washington's Individual Chicken and Meat Flavored Broth "Aces," offering the same convenience and portion control as the coffee units, and 8-oz. individual-serving cans of Chef Boy-Ar-Dee Ravioli and Spaghetti and Meat Balls. The latter two products are heated and served in Helmco-Lacey cups in conjunction with either Heinz or Campbell soup kitchens, which are used by many drugstore lunch counters, roadside restaurants and other types of food-serving establishments. The miniature Chef Boy-Ar-Dee cans, with their familiar label, not only provide convenience, economy and portion control for the restaurant, but also assure the patron that he is getting a reliable food product, backed up by a well-known brand name.

General Foods Corp. recently introduced its Instant Maxwell House and Instant Sanka Coffee in single-portion 2-gm. foil packets. The opening of these envelopes is facilitated by pre-slitting them for a short distance at the edge; a direction arrow instructs the user to "separate corners—tear on dotted line." The slit does not pierce the actual compartment in which the soluble coffee is sealed; it stops immediately adjacent to a beveled seal crossing that corner of the envelope.

The convenience of single-portion coffee packs for institutional use is illustrated by the experience of Frontier Airlines, Inc., serving seven states in the rugged Rocky Mountain area. Frontier recently became the first airline to switch from regular coffee to individual-service packs of Instant Maxwell House on all flights. In doing so, the line eliminated a long-standing complaint on the part of air travelers—namely, the inconsistent quality of coffee served aloft. According to General Foods, tests have proved that the individual packs not only provide uniform cup quality, but also cut cost per cup and keep the unbrewed coffee fresh indefinitely.

"In switching to Instant Maxwell House," says J. B. Montgomery, superintendent of passenger service for the airline, "we were able to make the hot water in one beverage container serve as constant supply for coffee, tea, hot chocolate and bouillon." Because there is no waste, there is no unserved coffee to be thrown away at the end of a flight and since only hot water is carried in the containers, they can be cleaned quickly and easily and do not turn rancid or discolor.

Single-service heat-sealed foil envelopes are also being successfully used for the new-type soluble powdered cream products, such as Pream and Sprinkle. These convenient (*This article continued on page 190*)

* See "Arden's Diced Cream," MODERN PACKAGING, Nov., 1948, p. 100.

New tear-tape possibilities

Lever Bros. demonstrate a new versatile machine attachment that will position cross tapes on larger packages during wrapping

The sales appeal of the convenient easy-opening tear tape has been established beyond question.[1] It is particularly important on protectively wrapped and heat-sealed packages of film or foil, where the very strength of the material and of the seal, which give the product its protection, make it difficult to open. Recently we have seen the extension of the tear-tape principle to pre-fabricated film bags[2] as well as to corrugated shipping cases.[3]

But until recently the mechanical devices which would apply a tear tape to wrapped packages during the wrapping and sealing operation were specially engineered and adaptable generally only to specialized high-speed machines doing a repetitive, day-in-and-day-out-job on a single size of package. This in effect restricted the tear-tape feature to products like chewing gum and cigarets. The tape device was not flexible as to sizes and shapes of packages, however.

Now one of the nation's largest manufacturers of overwrapping and sealing machines, handling films, foils and papers in literally thousands of packaging plants, has perfected a new and versatile tear-tape applier which can be added as an accessory to almost any of these existing machines, or to any new machines as they are built.

One of the first large-scale applications of this new development is to Lever Bros. top-selling Good Luck brand of oleomargarine. Four foil-wrapped quarter-pound prints of Good Luck are packaged in a tuck-end folding carton, which is in turn overwrapped and sealed in a foil-paper lamination. The new device, during the carton overwrapping operation, applies a length of cellophane tear tape around the carton near one end so that when the tab is pulled it neatly shears off the end of the overwrap—much like a cigaret or chewing-gum package—and leaves the end flaps of the carton exposed for easy use. A bar of margarine can be withdrawn without destroying the rest of the protective wrap.

GOOD LUCK
NEW! DOUBLE FOR WRAPPED
This GOOD LUCK is double-wrapped in REYNOLDS ALUMINUM
to stay fresher than any other margarine
3 NYLONS

EASY OPENING of the carton end for greater consumer convenience is now offered by Lever's foil-paper overwrap on Good Luck Oleomargarine. When this end is opened, consumers can pull a bar at a time out of the tuck end without destroying the remainder of protective wrap.

Lever Bros.' experience with the new device in its Edgewater, N.J., plant indicates that the field is now wide open for application of tear tapes to many larger-size wrapped packages for which they had previously not been practical.

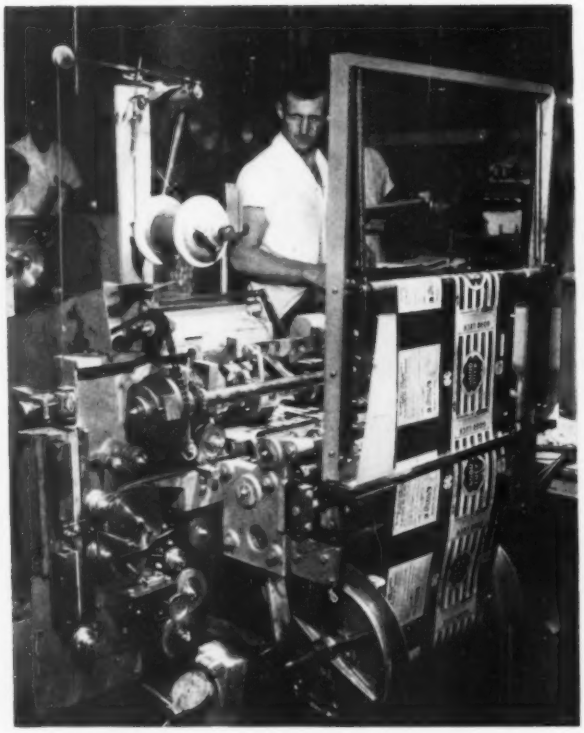
Many types of products offer interesting possibilities. A tray or carton of biscuits, for example, can be slipped out of the opened wrap and slipped back again after some of the biscuits have been removed. Where no carton is used, as in the case of paper napkins and stationery, the opened wrap continues to serve as a handy container.

These applications of tear tape weren't possible before. On larger-size packages the tape had to be applied along the length of the wrap as it came off the roll. The new attachment applies the tape across the web of the sheet, thereby making it possible to locate it at the end of the package instead of at the side. This is the big difference between the old and the new method.

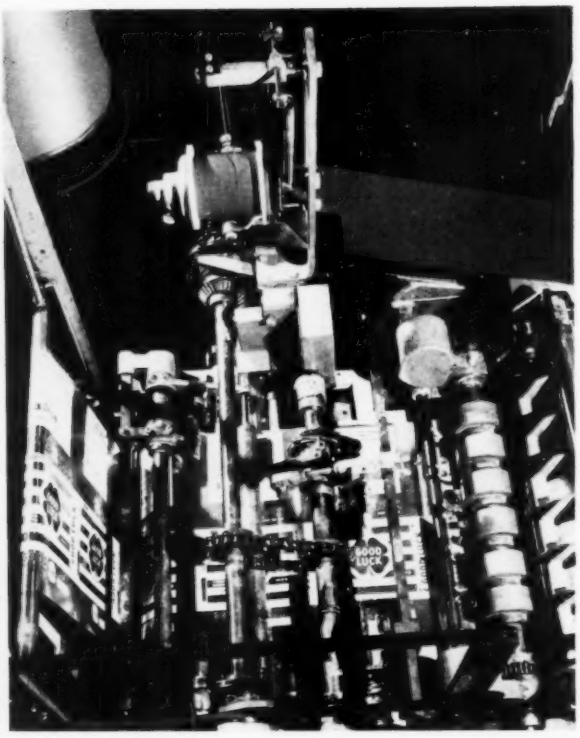
Sealed too well

Lever started to think about some kind of opening device when reports came in that the overwraps were sealed so well that consumers complained about the difficulty of opening them. The new tear-tape system, which could readily be applied to the company's existing heat-sealing overwrapping equipment, seemed to be

[1] See "Wanted: More Tear Tapes," MODERN PACKAGING, Oct., 1950, p. 93.
[2] See "Pre-Applied Tear Tape," MODERN PACKAGING, April, 1953, p. 130.
[3] See "Swing to Tear Strip Cases," MODERN PACKAGING, June, 1954, p. 116.



NEW ATTACHMENT for applying cellophane tear tape, which can be installed on standard wrapping machine, is shown on Lever's Good Luck overwrapping machine. Tape, spooled through wheels, is fed by vacuum belt to under side of web so tape can be located at end of package.



LOOKING DOWN into the machine, the tape, to which wax has already been applied, can barely be seen after being positioned under the web of the sheet. The roller compresses the tape tight against the foil. The sheet is then cut off, and wrapped and sealed around the carton.

the logical solution for the Lever operation.

Extending from the churn to the discharge of filled cartons for packing, the compact line is only about 50 ft. long. First the margarine is chilled and formed into bars. On conventional equipment the individual bars are then wrapped in a laminated foil-paper and moved by conveyor to the next operation where a carton is formed and closed around them. The print former and cartoner, of a standard type, is all one machine.

Next comes the carton overwrapper. The printed foil sheet is wrapped around the filled carton and sealed, as is customarily done, except that during the operation the tape is applied cross-web on the under side of the sheet at fixed intervals.

How it works

Here's what happens: The tear-tape unit accurately locates the cellophane tape so that it will come at the end of the package; it can do this in any desired location in relation to the package length. The double-ply-cellophane tear tape used by Lever is 3/32 in. wide. It is red at the moment, but will soon be changed to yellow to match better the color design of the printed foil overwrap.

The unit cuts the tape to the proper length, carries it across the web of the sheet and then applies it with wax to the under side of the printed foil before it is cut into an individual sheet from the roll.

The tear tape goes around the entire girth of the package and extends ¼ in. to ¾ in. beyond the outside of the sheet. It is this extension that serves as a pull tab. While the carton is being overwrapped, short slits are cut in the wrapper on each side of the tab to facilitate tearing.

In mechanically performing this operation, the tape unwinds from a roll and feeds through a series of wheels as if on a motion-picture projector. It passes through two tape heaters which remove wrinkles and make the tape more receptive to application of the wax. Continuing through a series of wheels, it rides over a wax wheel where a thin strip of hot wax, controlled at a temperature of 190 deg. F., is applied down the center of the tape. The wax line is interrupted to leave a clear portion of the tape for the knife to cut through. This is done by lifting the tape away from contact with the wax wheel for a distance of 1 in. or more.

Tape rides belt

The tape is fed to the web by riding on top of a perforated belt which in turn revolves around a wheel. A vacuum is pulled through the holes on the tape, thus holding the tape to the feed belt. When the tape is positioned under the web, it is cut off at a pre-determined length and is pressed between two rollers to the under side of the web. A length of foil is cut off, transferred to the carton-carrying conveyor and tucked around the carton and sealed in the usual way.

Operators pack the cartons 24 to a shipping case, the usual count, but will soon shift to a count of 30. It is expected that considerable savings will then be made, since the

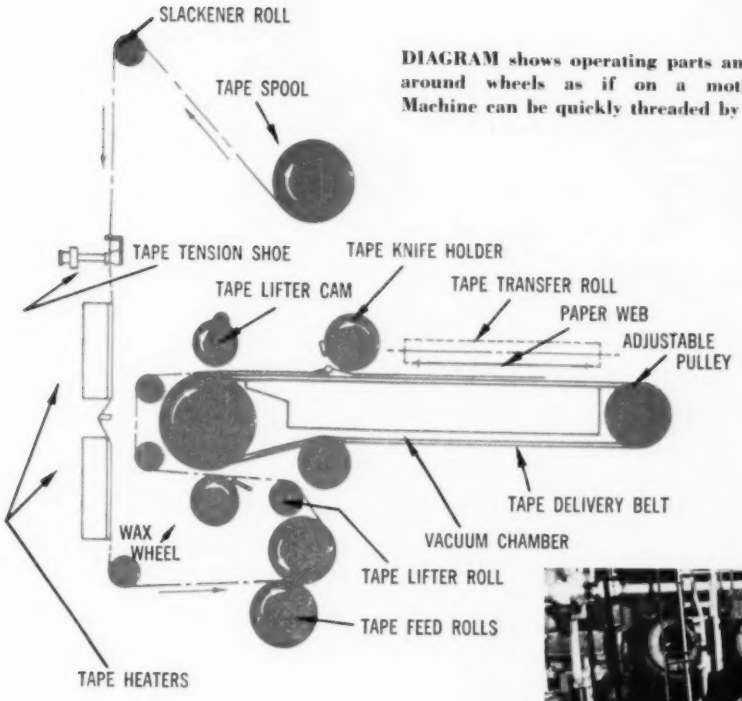
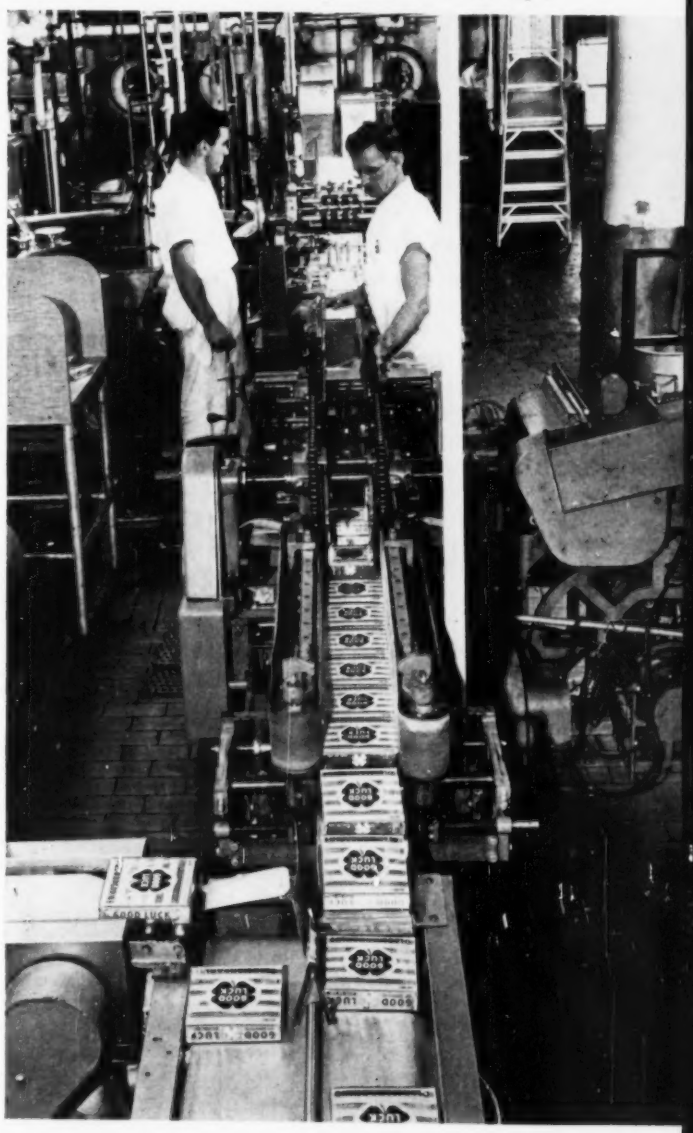


DIAGRAM shows operating parts and how tape is spooled around wheels as if on a motion-picture projector. Machine can be quickly threaded by experienced operator.

50-FT. LINE includes (starting from rear) churn, oleomargarine bar former, foil overwrapper for bars, cartoner, tear-tape attachment and carton overwrapper. Two operators shown in position here keep the machine stocked with materials and watch for possible defective wraps.



company will have less fibre in shipping cases, less handling and lower transportation costs. Also less labor and less warehouse space will be required.

As yet Lever has not made a point of its easy-opening device in any advertising copy, although such promotion is being planned. The only mention of it so far is on the package itself—the end which is cut away. It simply says, "To open—cut along this edge and pull out flap," and below this copy is the name, "Good Luck."

Since the attachment can be applied with such ease to hundreds of existing wrapping machines of many types, it is believed that many additional manufacturers will turn to the tear-tape feature.

CREDITS: *Tear-tape attachment and Model FF overwrapping machine by Package Machinery Co., East Longmeadow P.O., Springfield, Mass. (Attachment also applicable to all Model AC, CA-2, CP, DF, CM, FA, F-10-J and S-3 wrappers manufactured by this company.) "Morpac" print former, wrapper and cartoner by Lynch Corp., Packaging Machine Div., 3600 Summit St., Toledo 1, Ohio. Cellophane tear-tape by The Dobeckmun Co., 3301 Monroe Ave., Cleveland 13, Ohio. Foil-paper lamination by Reynolds Metals Co., 2500 S. Third St., Louisville 1, Ky.*

TOTAL VISIBILITY—a big selling point for this type of product—is achieved for XLNT's fresh refrigerated salads with molded polystyrene jar and airtight transparent polyethylene lid, shown here in typical display in self-service case. Filling-line efficiencies through new mechanical advances more than wiped out the expected added cost of the plastic over that of paper cups.

Automatically in plastics

Because of the apparent difference in cost of the materials, few would think of molded plastic containers as a profitable replacement for paper containers. Yet XLNT Spanish Foods Co., 60-year-old Los Angeles food specialty house, has made that switch for the fresh refrigerated salads which it is marketing widely throughout California, Arizona and Nevada—and found that it paid off handsomely.

Part of the reason for XLNT's success lies in newly developed means for continuous-line automatic dispensing, capping and sealing of the all-plastic container—a development of broad significance for other big-volume packagers who would like to use these all-transparent containers, shatterproof and one-sixth the weight of glass.

Part of the reason lies in a 40 to 50% increase in sales, which is attributed by XLNT directly to the factor of visibility of product—practically 100% in the new container, as against about 25% in the previous waxed-paper tub with a cellophane-windowed snap-in paper lid.

And part of the reason for the

PREVIOUS LINE as used for window-lidded paper containers required 10 operators, with hand feeding and hand lidding. Top speed was 35 a minute. Line photo shows initial hand operation with plastic containers, same as used with paper tub (inset).

sales increase, certainly, lies in the protection of the airtight polyethylene lid which keeps the salads fresh, gives the retailer the advantage of longer shelf life and less waste, and wins consumer favor with a higher-quality product. Dealers readily accept the new package because it constantly presents a clean, fresh appearance and never gets "shopworn."

Like the previous paper containers, the new injection-molded plastic jars—made of odorless, tasteless and chip-proof polystyrene—hold 16 oz. each of such products as potato, fruit and vegetable salad and cole slaw. Tapered slightly to the base so that they nest in stacks, they have a new rim bead to facilitate hermetic sealing of the snap-over polyethylene lid, also transparent except for printing which identifies brand and product.

The two keys to the new-found efficiency in production are the automatic container dispenser which starts the line and the automatic capper which ends it, both of which are believed to be the first ever perfected for all-plastic containers of this type. The XLNT company worked for six months as a team with its plastic molder and machine supplier to develop the equipment and the containers and lids that would work properly with it.

The immediate result is a 50% reduction in labor cost, with a better-than-30% gain in packaging efficiency. The same filling machine is used. But whereas previously the line required 10 employees who produced an average of 35 units per minute with hand dispensing and capping operations, the new continuous-flow line needs only five employees to turn out a steady 50 units per minute. An additional gain in over-all daily production comes from elimination of the peaks and valleys characteristic of manual operations.

The dispenser works on a principle similar to that of the familiar paper drinking-cup dispenser, dropping containers one at a time from the bottom of a nested stack. But there were ticklish problems due to the light weight and "bounce" of the empty plastic containers which frequently caused them to tip over on hitting the conveyor belt. This was overcome with a special guide that would not permit the cups to tip or bounce.

The containers pass immediately under a stainless-steel piston filler, which loads them with 16-oz. of fresh salad. Garnishing, in some cases, is added by hand and they then pass onto the capping table.

The automatic capper—an adaptation of a standard model used for vacuum-type metal lids on glass containers—presented more difficulty. If the containers were not precisely centered under the capping head, breakage would result when pressure was applied. Another special set of guide rails prevented this. But breakage also was sometimes caused by the expansion of the polyethylene lids over the rim of the rigid cup. Increased clearance in the capper head to allow for expansion took care of this.

Lids feed automatically off the bottom of a vertical hopper similar to that used for the containers themselves.

An added advantage of the plastic containers is that they may easily be washed with warm water to remove traces of product, such as potato salad, that sometimes adhere to the outside. This operation is performed immediately after the capping by means of a continuous spray-type washer. Because of the characteristics of the wax coating, this was not easily done with the paper containers.

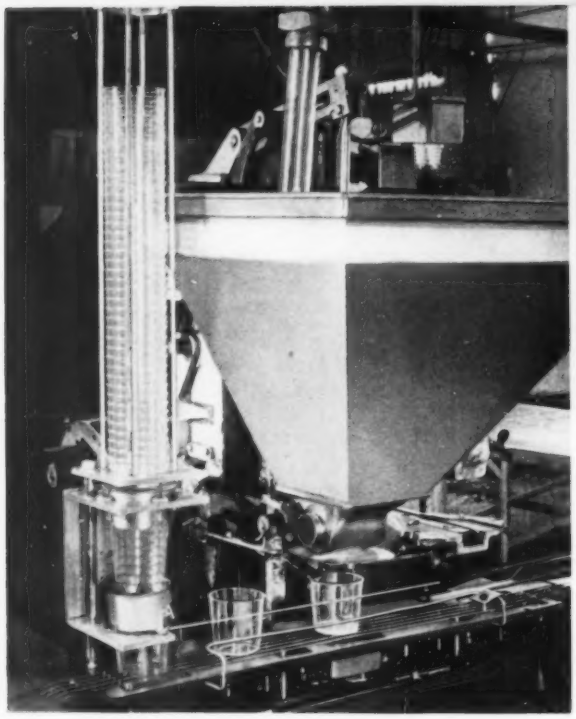
The impressive fact reported by the XLNT company on the basis of experience to date is that the increased efficiencies of production in their plant have alone more than made up the additional cost of the all-plastic container over paper.

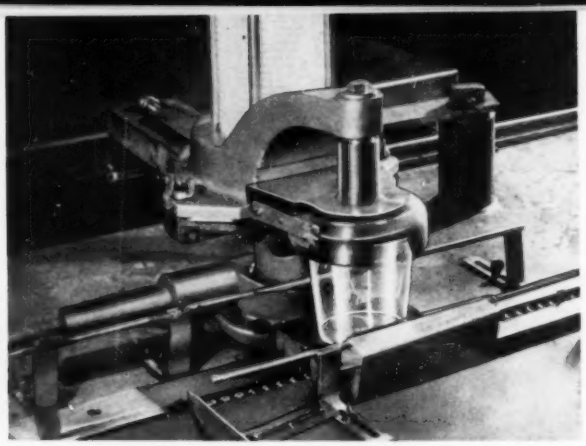
The 16-oz. polystyrene container and the polyethylene lid were designed from the beginning for this first automatic dispensing, filling and lidding operation. The container itself presented few difficulties, al-

XLNT breaks the barrier of filling-line mechanization in sealing its salads in all-plastic containers—at a saving

ALL PHOTOS COURTESY SOUTHERN CALIF. PLASTIC CO.

NEW LINE, with automatic container dispenser (left) and automatic capper (right), needs only five attendants, mainly to keep the hoppers filled and take completed packages away at rate of 50 a minute. Fifth attendant handles wash-off device.





AUTOMATIC CAPPER feeds polyethylene lid and presses it into airtight fit over beaded rim of container (shown empty here). Special features in design of lid and capping head permit effective sealing without danger of container breakage.

AUTOMATIC DISPENSER (left) drops containers one at a time through special guide that eliminates bounce and tipping and assures perfect alignment under the filling head at right.

though precise dimensions and precision molding were required to eliminate the possibility that there might be faulty capping.

The rim bead, which allows for the snap-over sealing of the polyethylene lid, also gives added container strength.

The container lid required considerable experimental work to adapt it to trouble-free operation in the automatic capper. Polyethylene proved to be the most suitable material for the lid because of its inherent sealing qualities—tending to give a vapor-tight seal when pressed against the lip of the container—its unbreakability and its printability.

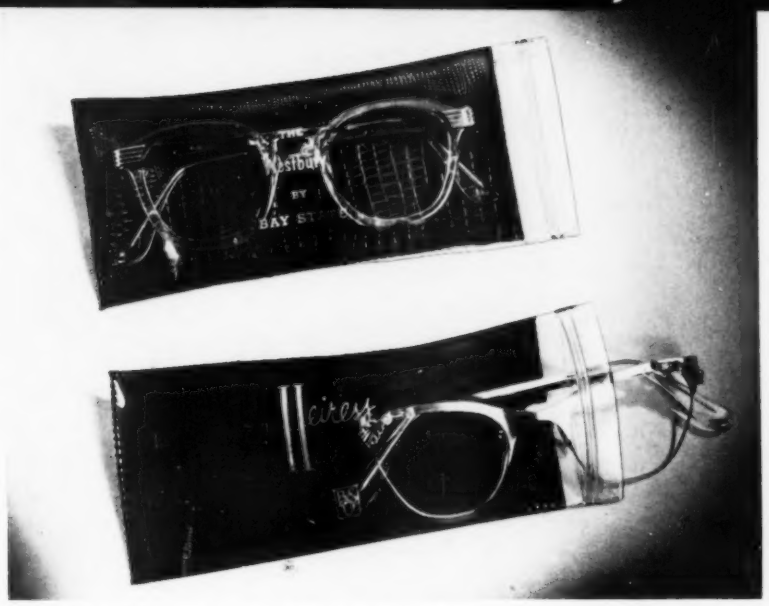
The nearly 100% visibility provided by the all-plastic container and lid have proved a definite sales asset in the open, self-service, refrigerated delicatessen cases used in most stores—a popular department with food stores just now because it reportedly yields more profit per sales dollar than either staple groceries or frozen foods.

And consumers have shown a definite preference for the transparency of the lid, which permits easy identification of contents in the home refrigerator or freezer, and the airtight seal, which prevents transfer of flavors or odors to or from other foods. The containers are valued by housewives also, of course, as permanent covered refrigerator dishes for left-over foods. In such use, the printed lid gives daily reminder of the brand name.

New low freight rates recently authorized for plastic containers and lids, applying to both empty and filled containers, are believed likely to spur demand for this type of packaging. The jar-type molded container, using metal or plastic lids, has already found considerable acceptance for such products as ice cream, cottage cheese, sour cream, sherbet, dried fruits, nuts, cheese spreads, candy, peanut butter and some frozen foods. But XLNT becomes the first to mechanize completely the handling of an all-plastic jar and lid, opening this type of packaging to high-volume requirements for which it previously was not practical.

DESIGN FEATURE of polystyrene jar and polyethylene lid are shown in this close-up study. The jar has a flat, rather than a concave, bottom.

CREDITS: *Polystyrene jar and polyethylene lid molded by Southern California Plastic Co., 1805 Flower, Glendale, Calif., using Dow "Styron" polystyrene and Bakelite polyethylene. Automatic dispensing, filling and capping equipment manufactured by Anderson Bros. Mfg. Co., 1907 Kishwaukee St., Rockford, Ill., and installed by the E. M. Underwood Co., Los Angeles. Printing of polyethylene lids by Highland Printers, 5216 Monte Vista St., Los Angeles.*



EASY TO OPEN and easy to close are assets of Bay State's new vinyl pouches for two styles of eye-glass frames. Seal is effected by two vinyl ridges on lip of pouch which interlock when pressed together.

No-zip zipper

New pouch with interlocking vinyl ridges can be sealed, opened and resealed time and again

A practical application in the packaging field of the intriguing sliderless zipper*—the closure that seals itself shut by a squeeze of the finger and is opened simply by lifting apart—is its use by the Bay State Optical Co., Inc., Westbury, Long Island, N. Y., on the new vinyl plastic pouches for packaging the better eye-glass frames in its line.

This new type of closure should have appeal for a great many manufacturers who need an airtight-sealed package that must be provided with some method of opening and resealing at the counter.

Pouches and bags of either vinyl or polyethylene plastics or laminations such as polyethylene-cellophane can be made with these closures. The seal is effected by an extruded strip of grooved vinyl (or other material used in making the bag) electronically sealed to both facing lips of the pouch. When pressed together, the ridges interlock. To break the seal, a lip along one of the sets of ridges is lifted, thus disengaging the fastener. It can be sealed and unsealed an indefinite number of times.

Bay State uses the fastener on its vinyl pouches for two styles of eye-glass frames—the Westbury, newest and most expensive in its line, and the high-quality Heiress—to protect them from air, dust, water and moisture. The new vinyl pouches scored far higher than previously used packages.

The new pouch, only 6¾ by 2¾ in. in size, fits neatly in a woman's purse and also in standard wood and steel optical storage drawers used by wholesalers, retailers and jobbers.

Wholesalers and jobbers claim that the new packages ease their handling problems. Retailer enthusiasm is founded on the use of the pouch as a showcase in presenting the frames.

Assembly of the frame in the pouch involves no more than one girl who lifts one of the flanges, inserts the frames and closes the pouch.

The complete, printed eye-glass case is supplied to Bay State by the fabricator. It is made of two pieces of unsupported, calendered vinyl, to which the vinyl fastener is attached. The two pieces are sealed together to form a pouch. A simulated leather back of the Westbury case—12-gauge vinyl—is calendered in a plain, brown color and then processed further to achieve the leather-grain effect. This is done by embossing a design, in this case an alligator effect, on the face of the vinyl and then two-toning or adding the exact shading of color desired to one side (the side which shows through the clear vinyl).

The back or alligator side is heat sealed to 20-gauge clear vinyl so the design faces through the clear material.

When the two faces of the pouch are sealed together, the flanged edge, which seals the pouch shut with a squeeze of a finger, is already in position on each face. This material is supplied to the fabricator in strips of any pre-determined length and cut off to suit the particular application. The fabricator of Bay State's envelopes receives the fastener strips in lengths of 12 in. and automatically cuts them off at 3-in. intervals as they are electronically sealed to the lips of the pouch. Name of the frame and the company's trademark is gold stamped on the pouch. Size, style and color of the frame are printed on a tag inserted in the case.

The same procedure is followed with the Heiress case which, of course, carries a different design.

CREDITS: *Vinyl pouch with fastener fabricated by the Opticase Co., 150 Dickerson St., Newark, N. J. "Flextite" fastener by Flexi-Grip, Inc., 104 E. 61 St., New York 21.*

TO CLOSE, lip of pouch is pressed slowly together between two fingers to engage tracks, making airtight seal each time.

* See "Called a Sliderless Zipper," MODERN PACKAGING, June, 1953, p. 173.

PHOTO COURTESY MERCK & CO., INC.

90% OF ALL the prescriptions a druggist fills today could not have been supplied 15 years ago. Drug manufacture has been one of the fastest-growing industries, demanding specialized packaging techniques that have few parallels for precision and exactness.

Drugs

The packaging of pharmaceutical products is a study in precision, exactness and devotion to detail that has few parallels in modern industry.

It is the story of gleaming modern laboratories, of white-clad workers in sterile filling rooms, of machines that measure the most accurate dosages into the tiniest of glass vials, of meticulous inspection to catch any possible package defect or straying label. It is a story of art staffs grappling with the smallest of readable type faces to get the hundreds of necessary words of medical nomenclature into postage-stamp space. It is the story of endless testing of package materials and finished packages to bring quality control within the closest possible tolerances.

In products and packaging, the drug industry divides itself rather neatly into two parts: (1) the ethical products, sold only to doctors, hospitals or on prescription, and (2) the proprietary products, sold by brand name, over the counter, without prescription. Most drug manufacturers have some products in both fields, although there are sharp differences in their degree of interest in the two fields. Because of the obvious differences in packaging approach (the proprietary product depends almost entirely upon advertising, display and brand-name packaging to win sales; the ethical product is bought only on doctor's orders and usually without the consumer even being aware of the brand name), this study of drug packaging splits naturally into the same two subheadings.

How big is this industry packaging-wise? The Department of Commerce estimates the value of its shipments, as of 1952, at approximately $1½ billion. MODERN PACKAGING'S recent study of packaging costs in several industries indicated a figure of about 35% as an average for all drug products. On this basis, then, the drug industry spends more than half a billion dollars per year on packaging.

What has been happening in the ethical field is indicated by the growth of drug-store income from prescriptions, now estimated by some sources as representing 23% of all drug-store sales and, according to the National Assn. of Druggists, 63% of the druggist's profit.

In 1939 drug stores were reported to have had $165,000,000 in sales from prescriptions, according to the publication, *Drug and Cosmetic Industry*. This year, *American Druggist* estimates sales of prescription drugs will pass the $1-billion mark. During the same period the average prescription sale increased from 91 cents to somewhere around $2.17, according to latest surveys. The Health Information Foundation, an organization supported by 165 firms in the drug, pharmaceutical, chemical and allied field, estimates that American families today spend 15% of their annual health bill for prescriptions and other pharmaceutical products.

The effect of this growth on packaging has been revealed in the tremendous number of new packages required to market the constantly increasing number of new "wonder" drugs and other new formulations that come out each year. It is reported that 90% of today's prescriptions could not have been filled 15 years ago. And the list increases every year, some firms introducing new products and variations of

new products at the rate of hundreds in a single year.

At the same time, proprietary drug products have been showing similar gains. Today proprietary medicines represent 18.5% of drug-store sales, second only to prescription drugs.

This volume and variety has made necessary the development of packaging organization and procedure to establish methods and standardized practices that have in many cases become models of efficiency, flexibility and economy for the entire packaging field. The gains in packaged over-the-counter medicines have brought similar problems, plus additional considerations of package design and appearance inherent to all products that are selling in open display today.

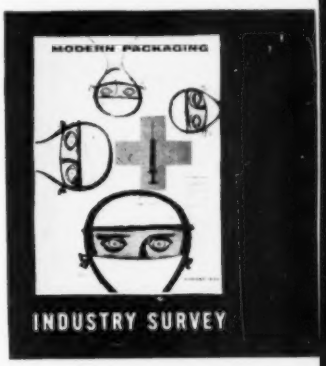
Despite the keen competition among the ethical drug houses in product sales, these firms have one thing in common. Their packaging problems tend to certain established forms, depending upon how the various drugs are administered.

For example, the familiar rubber-stoppered, aluminum-sealed vial is used for all manner of injectables in liquid form. Glass containers with screw caps are universally accepted for tablets or capsules. Likewise in general use are the various types of glass ampoules, capillary tubes, the single-dose unit packs of flexible materials. More examples could be pointed out, but these are enough to indicate the pattern and there appears to be little deviation from the basic forms. Ethical drug and pharmaceutical houses are resistant to anything that might be considered "gadgety" for products which may be a matter of life or death.

Protection to maintain the purity and efficacy of the drug is always the absolute essential. Nothing can be sacrificed for protection. And the fact that ethical drugs command a comparatively high price has permitted the use of the best packaging methods and techniques.

However, competition and higher operating costs all along the line during recent years have forced many drug firms to look for packaging eco-

Ethical products of the $1 ½ billion pharmaceutical industry are packaged with life-or-death exactitude; proprietary drugs require, in addition, a fine touch of salesmanship



SEALED ROOMS help to assure purity. Here under ultraviolet light, vials for the intramuscular form of terramycin are washed and inspected at Chas. Pfizer & Co., Inc., plant.

COMPLEXITY of pharmaceutical packaging is indicated by a few examples of 33 different sizes and dosage forms of Pfizer terramycin products. This antibiotic, used in treating more than 100 diseases, is packaged in 19 different dosage forms for children and adults, for eyes and ears, for hospitals and dentists, plus being combined with Cortril, Pfizer's form of hydrocortisone.

SIMPLIFIED design of Schenley Laboratories' new labels makes it easier for the pharmacist to identify products on the shelf. Note how end panels have been used for presenting descriptive matter.

nomies through mechanization and better-organized techniques. Penicillin is one example. In the beginning when only a few firms were producing this product, profits were large. As others entered the field, the trend of price was downward, until today there is little profit margin in penicillin. A fraction of a cent that can be saved per package by greater operating efficiency, or by quantity purchases of printed labels or cartons can make a difference of thousands of dollars per year when related, for instance, to a production of 100,000,000 vials of antibiotics per year.

Seeking to effect such economies in packaging has led drug manufacturing firms to recognize packaging as a top-management problem and has resulted in the establishment in almost every leading firm of a packaging department with specialized personnel. Twenty years ago such departments were almost non-existent. The contin-

Today's convenience packaging for physician and patient

DISPOSABLE INJECTION units eliminate time-consuming preparation of syringe assemblies. Squibb's "Crystifor 400 Duomatic" is a sterile, two-compartment unit of polystyrene and glass.

SQUEEZE BOTTLE enters the prescription drug field for "Hydrocortone" lotion, just introduced by Sharp & Dohme Div. of Merck & Co., Inc. Package provides the patient with product in cosmetically acceptable and easily applied form.

PHOTO COURTESY PLAX CORP.

THIN-WALL polyethylene bottle with special applicator has been adopted by the C. B. Fleet Co. as a professional-use enema—a single-use, disposable container. Polyethylene material gives good protection to the product and provides an unbreakable container. Thin gauge also offers economy for throw-away unit.

ued trend to affiliations between manufacturing chemical firms and ethical drug firms, such as the association of Lederle Laboratories with American Cyanamid, Schenley Laboratories with Schenley Distillers, Sharp & Dohme with Merck & Co., E. R. Squibb & Sons with Mathieson Chemical, etc., make coordinated packaging activity an even more important factor in effecting profitable operation through these more closely knit organizations for association of chemical and biological manufacture with packaged prescription products.

One of the most striking examples of what may be accomplished through centralized packaging activity was that reported by Sharp & Dohme as the result of its standardization studies during 1950 and 1951 when something like $391,000 was saved by changes that involved a substantial increase in automatic cartoning, complete overhauling and standardization of glass containers, closures, liners, labels, secondary packs and corrugated packers, new equipment for unit packs of physicians' samples, new and faster tablet-filling equipment, changes in printed procedures, etc.[1] At that time it was estimated that a saving of nearly $50,000 alone was achieved as the result of reducing the number of bottle sizes from 62 to 28. For a firm with annual revenues of around $45,000,000, this sum was extremely significant.

Sharp & Dohme's package development department, however, is keenly aware of the need for continuing packaging study in an industry that changes as quickly as the drug field. Within a period of two years some of the newly established standard practices became obsolete due to the constantly changing product picture.

There are product trends in the drug field that affect packaging. Several firms have noticed a decrease in demand for liquids and an increasing one for tablets, lotions and ointments. Such trends, obviously, demand study of new types of containers and a constant revaluation of old ones.

A well-organized package development department is in a position not only to review existing packages, but to study and develop new ones needed for new products.

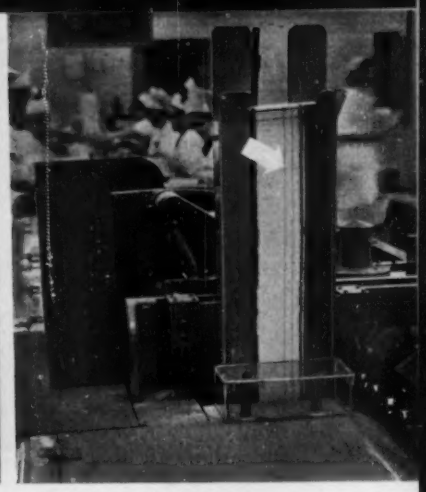
Drug manufacturers have excellent opportunity during pilot-packaging operations for clinical purposes to study requirements for the eventual full-scale commercial packaging of a product. During these pilot operations there is a chance to study the compatability of packaging materials with the product, the physical standard for the product, the most economical filling, closing and sealing methods, proper dosage and sales units, anticipated market quantities and the preparation of ethical and regulatory text matter.[2]

[1] See "The War on Costs," MODERN PACKAGING, April, 1952, p. 81.

[2] See "Developing the Drug Package," MODERN PACKAGING, March, 1951, p. 69.

Constant vigilance to assure quality

INSPECTORS double check every bottle of Lederle drugs before it leaves the production line. In this way it is almost an impossibility for any drug product leaving the Lederle Laboratories' plant to be mislabeled.



MATCHED MARKS on corner of cartons, when stacked flat, form a line down stack. Wrong cartons can be easily detected if marks are out of line.

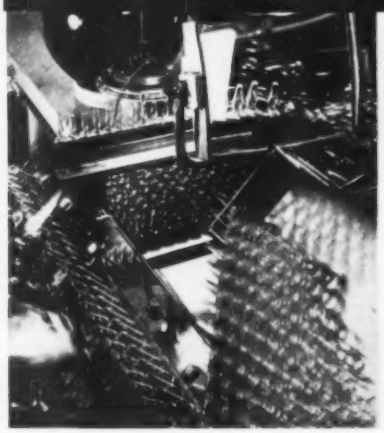
It is through such pre-testing that the drug firms have been able to pioneer new packaging materials and methods. It was one of the reasons why Sharp & Dohme, for instance, was able to point the way to economical and efficient use of friction-type polyethylene closures and why the drug field was one of the first to use polyethylene closure liners, applied color labeling and many of the flexible-film unit packs in the packaging of physicians' samples.

Among much-discussed new ideas

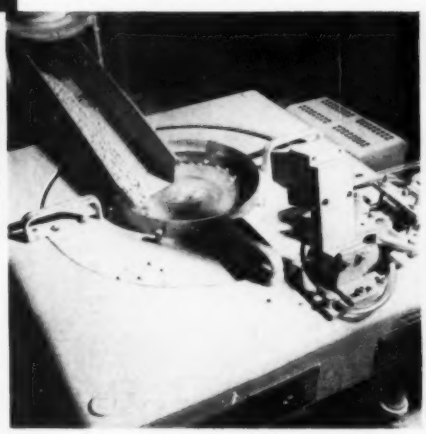
ROLL LABELING is being studied widely as the answer to reducing rejects as the result of mislabeling. This machine is in operation at Sharp & Dohme for labeling ointment tubes. Labels printed in rolls assure that all labels will be the same on any given run.

Quantity production demands new high-speed methods

UNIT PACKAGING in flexible film strips has become an essential in drug industry, particularly for physicians' samples. Two attendants keep these six strip-packaging machines operating at Warner-Chilcott Laboratories.



AMPOULE FILLING at Upjohn. Ampoules fed onto conveyor move under filling needle, through gas-flame sealer, are cooled, dropped on chute, emptied into tray. Operator inspects through magnifier (top right).



1,350,000 TABLETS an hour can be counted by means of the whirling plate in this electric counter. The whirling tablets break an electronic beam which "counts" and shuttles them in pre-determined quantities into the waiting bottles below. Tablets are fed alternately through ducts to the bottles. This installation at Warner-Chilcott Laboratories is shown packaging Methium Chloride tablets, the drug used for the treatment of high blood pressure.

in drug packaging today is the single-dosage disposable syringe.[3] A dozen or more versions are on the market, but the greatest obstacle seems to be cost. Some firms say the cost of such packaging is far out of line with many of the products that can be packaged in them. On the other hand, the convenience to physician and patient may be a more important consideration than cost. It has been estimated that a disposable syringe assembly, ready to use without sterilization, can save hours of a physician's time, permitting him to make many more calls per week. Also, with the disposable syringe, completely filled with the right dosage, he does not have to bother to have water boiled in the patient's home for sterilization—sometimes in places where it is inconvenient even to find the proper utensils and heating facilities for sterilization. There is definitely a specialized place for this type of container not only for such purposes, but for use in Army field operations and disaster situations where preparation of a syringe is inconvenient or impossible.

Ethical drug firms are extremely enthusiastic about the use of polyethylene in packaging because of its inertness to almost all types of compounds. However, one of the handicaps has been the difficulty of surgically sterilizing polyethylene. All are watching closely the development of irradiated polyethylene, which would provide polyethylene supposedly able to withstand the high temperatures necessary for steam sterilization.

Also currently prominent is the use of silicone coatings for glass containers. The greatest advantage claimed is the economy to be achieved in reducing costly overfills. The properties of silicone coatings, reportedly, are such that a glass container treated with them internally will empty clean to the last drop, thereby eliminating the waste residue that ordinarily clings to the inside of a container.[4] So far there has been success in this direction for containers with dry products, but most firms are proceeding cautiously in its use for containers destined to contain liquids. Not enough is known about the reaction of the silicones, they say,

[3] See "Disposable Injectables," MODERN PACKAGING, Jan., 1953, p. 108, and "High Speed Injectables," MODERN PACKAGING, Aug., 1953, p. 94.

[4] See "Silicones in Packaging," MODERN PACKAGING, Dec., 1953, p. 149.

to various ingredients in pharmaceutical products. It has been the experience also in some laboratories that certain products have eaten through the silicone coating, so that the protective feature is lost and the dissolution of the silicones in the drug is open to question.

A possible development of containers made from "ribbon" glass is also being watched. The containers, supposedly, are being made from extruded and blown glass, similar to electric light bulbs, instead of in conventional molds. The expected advantages will be greater uniformity of weights and capacities, plus improved appearance.

There also seems to be a trend to packages with convenience features, such as the use of a polyethylene spray bottle for a prescription of hydrocortisone in lotion form for the treatment of certain types of dermitosis. A thin-walled polyethylene squeeze bottle with applicator closure has been introduced commercially as a single-use package for professional-use enema. A plastic container with a dial-type closure has been introduced which designates a different number each time it dispenses to indicate the hours when the tablets contained are to be taken.

Lederle's new "Century-pak" for bulk tablets is also a good example of new convenience. Instead of bulk shipment of tablets loose in drums, Lederle is packing the drums with polyethylene packets each containing 100 pre-counted tablets. The packets not only give better protection to the tablets, but provide the drug distributor or prescription druggist with a convenient pre-counted unit. Formerly they had to count out the tablets individually or by weight.

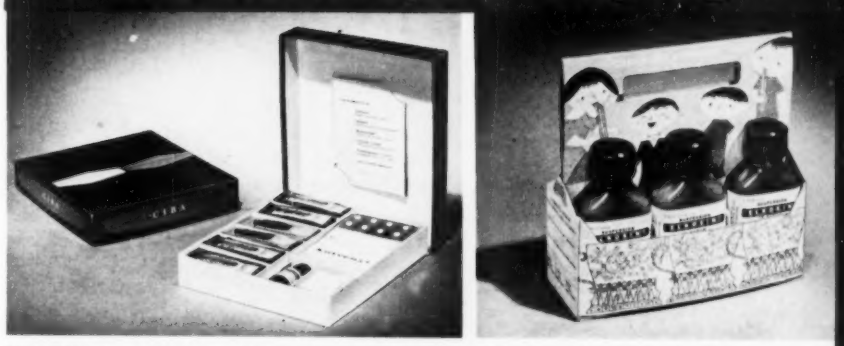
Outstanding machinery developments in the drug field include the many types of accurate tablet-counting machines and the filling devices for the extremely tiny ampoules and tubes, which operate within extremely close tolerances. Automatic cartoning has become almost universal today in the large drug houses wherever large volume is involved through the development of machines that are interchangeable to a number of sizes. Standardization of glass-container sizes and shapes has been an important aid to the use of mechanical cartoning equipment.

Labeling, of course, still continues to be one of the most exacting problems of drug packaging. Nearly every large firm has hundreds of products, packaged in different-sized units. If they are sold in foreign countries they must meet varying legal and linguistic requirements. Even the requirements of different states in this country often differ. One firm estimates that it requires more than 3,000 different labels and package circulars for foreign requirements alone.

Drug labels must be designed to carry all necessary copy—sometimes an almost insurmountable problem within the limited amount of space. We saw one art director struggling to lay out a 6-by-3½-in. label area to

MAXIMUM space for copy is an ever-present problem in ethical-drug design arrangements. Lederle's new professional veterinary line meets this requirement easily with simple red border and distinguishing letter "L" at upper left.

Showmanship in sampling



MULTIPLE SAMPLE UNITS of related items are Ciba's answer to saving physician's time and to effect savings in material and handling. Shown is unit containing ample trial quantities of new as well as seasonal medications.

COLA CARRIER in miniature for Ciba's Elkosin Syrup samples reminds physician of its pleasant strawberry taste, appealing to children.

PHOTO COURTESY A. FLEISIG.

GAME APPEAL is the psychology behind new sampling unit for Schenley Labs.' Ediol, a product to help put on weight. Each Indian box contains liquid-holding unit pack of product which doctor squeezes into tiny cup for child to try. Also included is balloon with picture of Indian that grows as the balloon is inflated—like little Johnny will grow if he takes the medicine that "tastes just like ice cream."

Over-the-counter drugs must be self selling

BUFFERIN
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some believe is necessary today when the average physician receives more than 3,000 mailings a year or about 10 a day, according to a study made by Clark O'Neill, New York, an addressing service to the medical profession.

An interesting example of the trend is Ciba's 1954 sampling program with multiple sample units—several related products in a kit—such as a seasonal unit including ointment for sunburn, cream for the relief of itching due to allergy, insect bites, plant poisoning, etc., a medication for such summer discomforts as athlete's foot and other fungus infections.

Ciba reasons that this type of contact will save the physician time by supplying trial quantities of several useful products in one mailing. Presentation in one impressive unit also will command increased attention and thereby aid in putting across the promotional story, besides representing appreciable saving in material handling by combining several sample campaigns in one.

There are also a number of examples of striking novelty packaging appeals to intrique doctor, mother and child in connection with medications for children.

For "Elkosin" Syrup, Ciba made a sample in the form of a miniature soft-drink carrier. One of the advantages Ciba emphasizes for this product is its strawberry taste and since taste is a decisive factor in the selection of medication for children, the company designed the tiny carrier unit with six bottles to remind physicians of the outstanding flavor of Elkosin. Artwork and copy serve to further the theme by depicting children enjoying the medication as they would a strawberry soda.

Even more elaborately thought out is a new sample idea for a Schenley Laboratories product called Ediol, recommended for people who want to gain weight. The samples arrive on the doctor's desk in a set-up box upon which are depicted humorous little Indians. Inside are eight cartons, each designed with illustrations of similar Indians—little boys and little girls. Inside each carton is a liquid-holding foil unit package holding a sample of the product, a tiny paper cup, a toy balloon and a descriptive folder.

The regular sales packages for the product are traditional round bottles and the product is fairly expensive in pint sizes. Therefore, when the doctor thinks little Johnnie or Mary could be benefited by Ediol, it is advisable to find out first with a sample if they will take it before Mom puts out the money for the prescription. By using the sample package as a game, the doctor can find out whether the child will take the medicine. The doctor opens one of the little cartons. He tears open the foil packet, squeezes the contents into the paper cup, gives it to Johnnie and says, "See, it tastes just like ice cream." Then he pulls the balloon out of the carton for Johnnie to blow up. On the balloon is a picture of an Indian which "grows" as the balloon inflates. "See, you will get big and strong like that if you take this nice tasting medicine." A folder explains ways for Mama to give Ediol to the child in milk, with cereal, in puddings, on ice cream, in a milk shake, etc.

The physical and protective requirements of packaging for proprietary and ethical drug products are similar. Both must assure quality and efficacy in every instance. And what applies to one group from a production standpoint applies to the other.

RADIO-ACTIVE drug products are being studied by at least nine firms. Abbott Laboratories has one radio-active product in a gelatin capsule to be swallowed for checking thyroid activity with a Geiger counter and packages small quantities of radio-active isotopes in single-trip cans with interior lead barriers.

The big difference today is in the merchandising approach. Like foods in a supermarket, the hundreds of remedies for self-medication on today's drug-store shelves—and in the rapidly growing drug departments of supermarkets—must sell themselves. There are fewer and fewer clerks anywhere to point out advantages and uses.

The drug store itself is going self service the same as the food store.[5] There are now nearly 7,000 self-service drug stores, representing 14.6% of all drug stores in the United States, according to *American Druggist*, and drug stores are switching to self service at a faster rate even than food stores are taking on drug lines. The number of self-service drug stores in 1953 was up an amazing 60% above the number reported the year before.

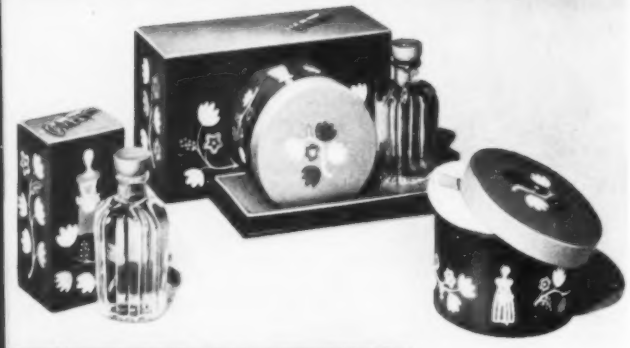
Whether the self-service food store continues to take business away from the drug store is a question of eco-

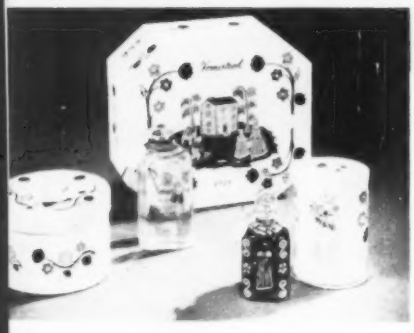
(This article continued on page 192)

[5] See "The Check-Out Drug Store," MODERN PACKAGING, Feb., 1954, p. 83.

DRIED PLASMA demands most exacting packaging technique. At The Upjohn Co., dried plasma is being capped under vacuum and the cap lacquered. Process is done under ultraviolet light. Operators wear transparent shields to protect eyes and face from light.

Design





NEW

OLD

New Early American Old Spice

After 17 years another famous line of packages is redesigned, proving again that no package can endure without change. The new Early American Old Spice packages reveal Shulton, Inc.'s modern approach to the quaint little boxes and bottles that began edging their way to leadership in 1937 (see "Packaging's Hall of Fame" article, MODERN PACKAGING, Sept., 1953, p. 102.)

The charm and identity of the old are still there but the figurine ladies are younger and smarter, stylized sprays are simpler and bolder, and charcoal gray and soft blue highlight these motifs. The Stiegel-type bottles have given way to fluted ones.

CREDITS: *Bottles by T. C. Wheaton Co., Millville, N. J. Bottle caps by Flyndustries, New York. Bottle label by Cameo Die & Label Co., New York. Dusting-powder container by F. N. Burt Co., Inc., Buffalo. Cover paper by Holyoke Paper Co., Holyoke, Mass. Silk screening and printing by M. H. Lavore, New York. Folding carton by Empire Box Corp., Garfield, N. J.*

Ten miniatures cradled in a breakproof carton

Small bottles are cradled so that they cannot be damaged or loosened during shipment in a colorful, protective display carton for U.S. merchandising of ten 1-oz. bottles of Grande Chartreuse, Queen of Liqueurs, imported and distributed by Schieffelin & Co., New York. Carton blank is die cut and scored so that, when set up, all sides of the carton are provided with double thicknesses of board and each bottle rests in die-cut openings that hold them tightly in place. The bottles can be removed by hand only when the lid of the carton is raised and folded back to form the display panel.

The typical French scene, reproduced on the display panel, is appropriate for a product imported from France and makes use of the yellow and green colors of the liqueurs.

CREDITS: *Carton design by George Reiner, New York. Box by Burgess & Why Corp., Philadelphia.*

Histories

Vivid pink cartons on Shasta jars command attention

A new trend may be indicated by the colorful cartons Procter & Gamble has adopted for jars of Shasta Cream Shampoo. The vivid pink cartons with blue accents were designed to offer impressive presentation to the jars in mass display. They are also easier for the retailer to stack. The carton blank is die cut and folded to form only five panels so that the open face forms a frame for the jar.

The new jar is specially shaped at the base to engage with the die cutting of the carton for a tight, snug fit.

The open jar's foil label, with blue background and lettering in pink and silver, is completely visible through the open-face carton.

CREDITS: *Design by Donald Deskey Associates, New York. Carton by Richardson Taylor-Globe Corp., Cincinnati. Jar by Hazel-Atlas Glass Co., Wheeling, W. Va. Closures by Phoenix Metal Cap Co., Chicago, and Armstrong Cork Co., Lancaster, Pa. Label by McDonald Printing Co., Inc., Cincinnati.*

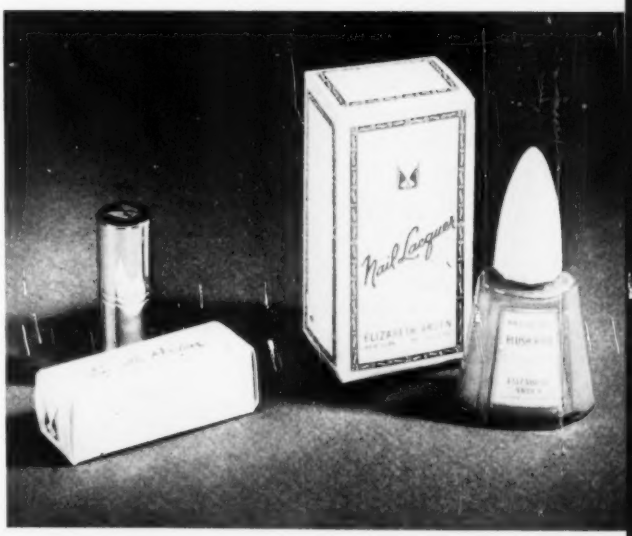
Super brilliance for new coated paperboard

Elizabeth Arden is among the first to use cartons made of a new high-gloss coated paperboard that appears to have the kind of reflective brilliance heretofore usually associated only with plastic laminations (see "Equipment & Materials," p. 134, this issue).

The design of the new Arden Nail Lacquer and lipstick cartons take full advantage of the qualities of this new board by leaving large unprinted areas to reveal the glossy white surface. Simplicity of the design adds to the luxury appearance of the package. Printing is confined to a delicate border in gold on all six sides, with all copy appearing on the front panel of the cartons.

The red and gold printing reveals the vividness and clarity of ink colors when used on this new type of luxury stock.

CREDITS: *"LusterBoard" coated board by S. D. Warren Co., Boston. Cartons by F. N. Burt Co., Inc., Buffalo.*



Faster can-carrier cartoning

The first installation of what is reported to be the fastest can cartoner in the brewing industry is now in full operation at the G. Heileman Brewing Co., La Crosse, Wis. The machine is attracting the attention not only of the entire brewing industry, where million-can-per-day volumes are not unusual, but that of soft-drink, fruit-juice-concentrate and other canned-product packagers who have been searching for more-efficient and more-economical methods of handling the now-popular multiple-unit carry-home cartons at very high speeds.*

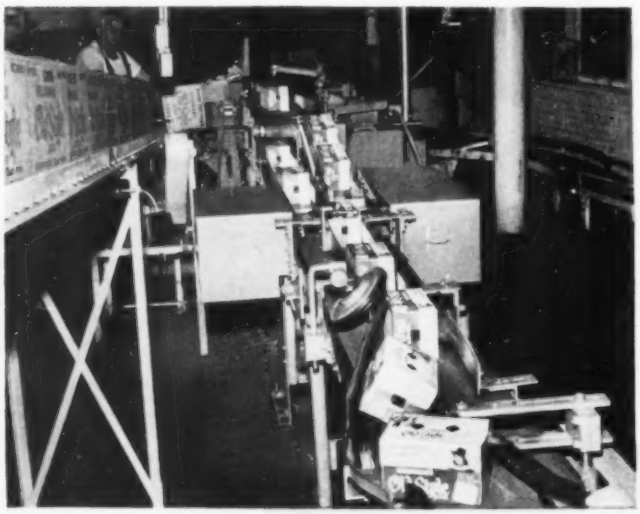
* See "The Carry-Carton Spreads Out," MODERN PACKAGING, June, 1954, p. 93.

Sealed-end carriers of six and 12 cans of beer are coming off the Heileman line at average cartoning speeds in excess of 600 cans per minute, with top speeds of 750 to 800 cans per minute reported possible by the manufacturer of the equipment. The operation consists not only of filling the 6- and 12-can packs automatically, but also inserting and sealing the carriers in master shipping cases of 48-can capacity.

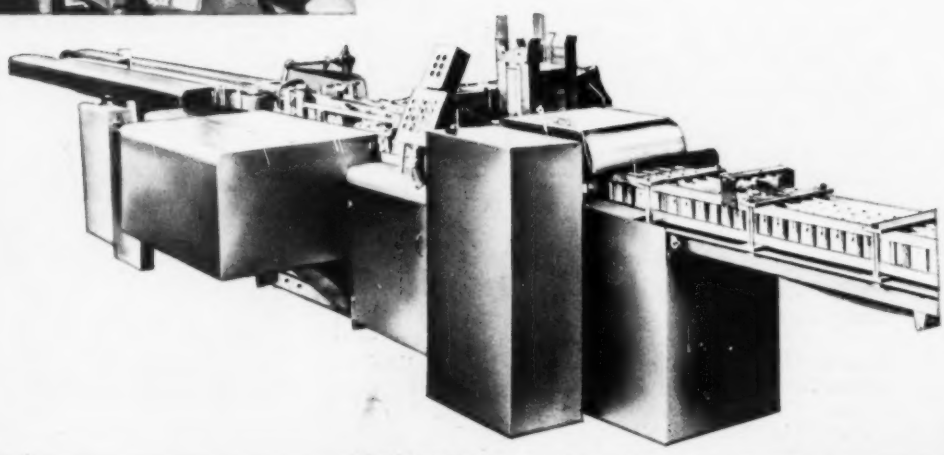
Constant motion is the principle that permits the high speeds, according to the manufacturer of the machine. The cans are handled in a straight line without abrupt change in direction. The unique method of converting incoming lines of cans into a unit load is smooth and continuous. The heart of the unit is a metering device which permits incoming solid lines of cans to be slightly decelerated so that two cans in each lane move forward sufficiently to create an opening between ranks. An overhead sweep bar moves down behind the group to transfer it (at synchronous speed) into the U-shaped conveyor bucket.

Despite its high speed and capacity, only one man is required to operate the machine under normal conditions. All critical points are protected by safety automatic controls, with indicating panel lights for each.

Among the advanced features of the machine is a method of heat drying which dries and sets the cartons in 17 ft. instead of 45 to 50 ft. of conventional belt conveyor. The use of an intaglio glue roller, which amounts to offset printing of the glue,



OVER-ALL IMPRESSION of the operation is given by these three photos in sequence from right. From turntable, the cans are diverted into three lanes for six pack and into four lanes for 12 pack. As they move through machine, the cans are automatically grouped. Cartons are opened and the loading mechanism carries each load to the opened cartons. Flaps are glued and the filled cartons pass through a 17-ft. drying conveyor and on to the case packer (left).



FOR CASE LOADING (above) cartons are first turned to travel lengthwise and then rotated 90 deg. about the long axis. Inclined V-belt and guides turn the cartons gently to avoid any damage to the score lines.

Heileman's gets 600 cans a minute with new continuous machinery that loads both carrier and shipping case fully automatically

assures absolute control of the glue pattern and a completely clean seal, according to Heileman.

By means of a short-count detector, working with an electronic "memory" circuit, any carton containing less than the correct number of cans is automatically ejected before going into the drying conveyor.

The same memory circuit performs a second and very unusual inspection function. When the machine stops for any reason, two or three cartons will remain in the machine with glue already applied to the flaps. These cartons will not have reached the off-take belts that deliver them to the drying conveyor and, consequently, the flaps will not be under compression. If the machine is idle for more than a few seconds, the glue on these flaps will set and the carton cannot thereafter be satisfactorily sealed. On the new machine, the memory circuit comes into action when the machine is stopped for more than a few seconds and automatically ejects all cartons with glue applied but not yet under compression.

This automatic gluing inspection, it is reported, eliminates one operator who normally stands between the cartoning machine and case packer, and whose sole duty is to inspect cartons for imperfectly glued flaps, take them off the line, apply glue and restore them to the line. The importance of this economy can be realized when it is known that the brewing industry figures the cost of one operator on each of three shifts at $15,000 a year. It is estimated that automatic ejection of short-count and imperfectly glued cartons alone will pay for the machine in less than three years.

CLOSE-UP of the two brands Heileman packs in six-can units on new machine. Accurately measured and spotted glue application provides extremely secure end-opening cartons with important convenience feature of finger-tip opening case.

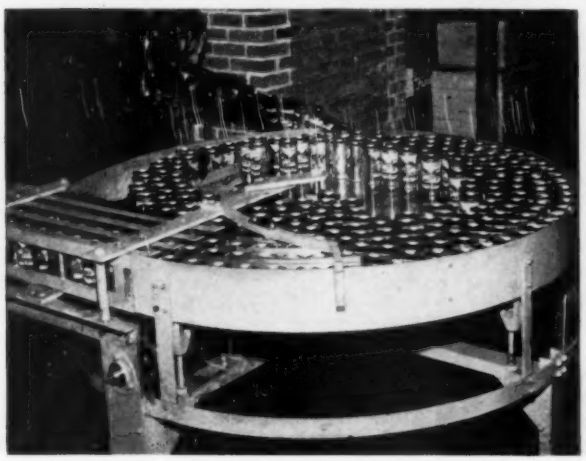
Ralph T. Johanson, president of Heileman Brewing Co., had sought this new type of cartoning equipment for multiple-unit packaging of the two brands of beer his company makes (Heileman's Old Style Lager and Heileman's Special Export) after seeing a demonstration of a similar machine placing cellophane cracker packages in cartons of approximately the same size and shape as the six-can beer packs at speeds of more than 180 cartons a minute. From delicate crackers to rugged cans was, in principle, a comparatively easy transition.

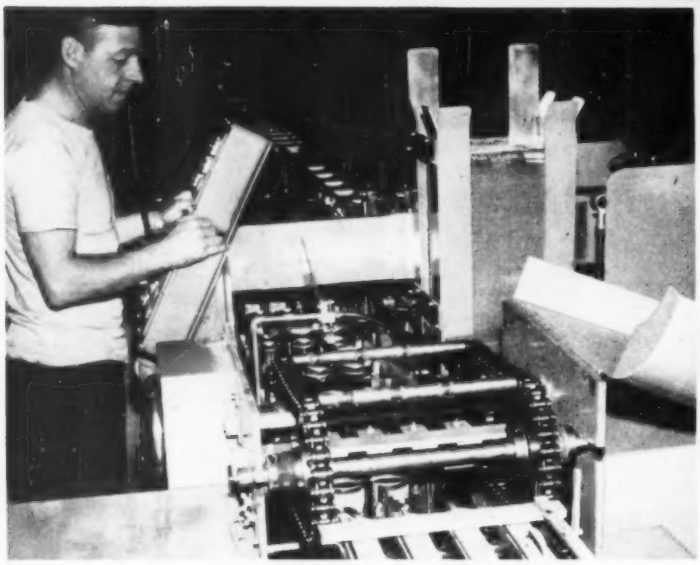
Brewery-bottle shop conditions, however, according to Mr. Johanson, were not exactly ideal for mechanical cartoning and necessarily humid conditions had always been a handicap in the use of solid fibre cartons, which became hard to handle as they soften with vapor-laden air. This old problem, apparently, has been completely overcome by the positive carton-opener mechanism and drying method of the new installation in his plant, the first of its kind in the brewing industry.

The intaglio glue printing roll with its accurately measured and spotted glue application, converts Heileman's end-opening carton into an extremely secure one, with the important merchandising feature of finger-tip opening ease.

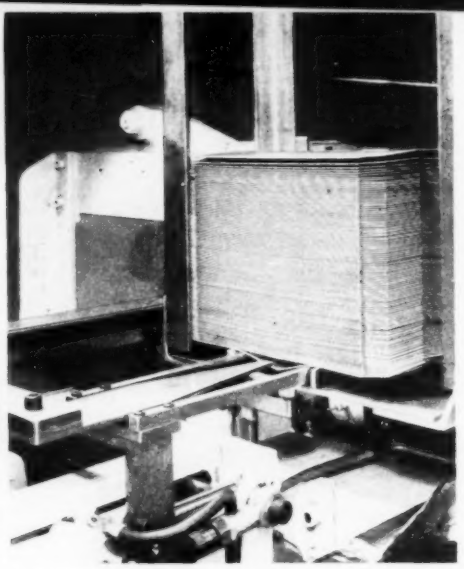
No costly modification of established brewery equipment was required. The Heileman company had previously installed an X-ray can-fill inspector and a 60-spout can filler. All this equipment was integrated into

LANES into which cans are diverted are shown at left prior to grouping in the metering device.





METERING DEVICE is the heart of the machine. Solid lanes of cans are decelerated slightly so that two cans in each lane move forward, are assembled as groups and placed in individual conveyor buckets. Single operator shown at controls is only one required to run cartoner.



CARTON OPENING is by positive mechanical motions. Vacuum cup pulls down bottom carton, separator blade enters and two fingers push carton into opening position.

the new line for an over-all speed of more than 600 cans per minute.

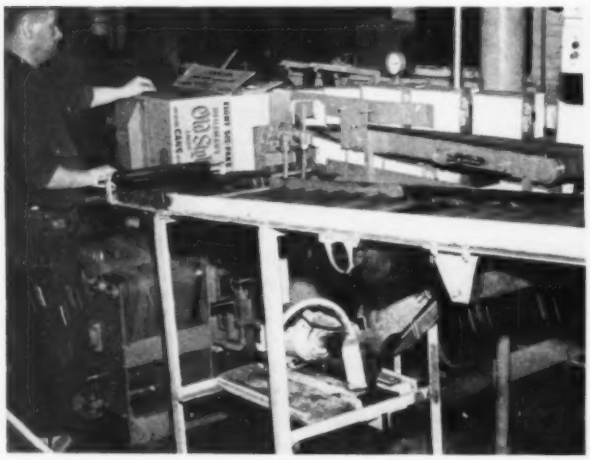
Operation of the new cartoner is in the following sequence:

From a turntable unscrambler, cans are received standing vertically and diverted into three lanes (for six-pack) or four lanes (for 12-pack). By means of a can-metering device, as previously explained, the solid lanes of cans are slightly decelerated so that two cans in each lane move forward and are assembled and placed in individual conveyor buckets.

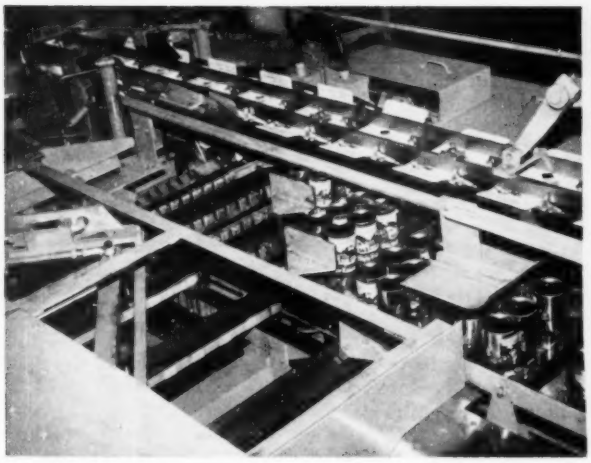
Cartons are fed from a vertical magazine and opened by positive mechanical motions. A vacuum cup pulls the bottom carton of the supply downward, permitting a separator blade to enter. Pushers move the carton forward into opening position and a carton-opening knife enters one end of the carton to lie the full length of the longitudinal score line. Cartons are then opened by mechanical fingers which push downward against the side panel. The operation is reported to be essentially unaffected by bent cartons or flaps, board caliper or other carton imperfections that are often troublesome in automatic cartoning operations. The opening device will even break loose a strong spot of glue inside the carton—which all suppliers occasionally leave.

The method of putting the entire load of six or 12 cans into a single conveyor bucket, then inserting them into cartons as a unit, is one of the features that differentiates the new cartoner from previous can-carrier cartoners. Each load of cans moves as a unit down stream in its bucket parallel to the fully opened carton.

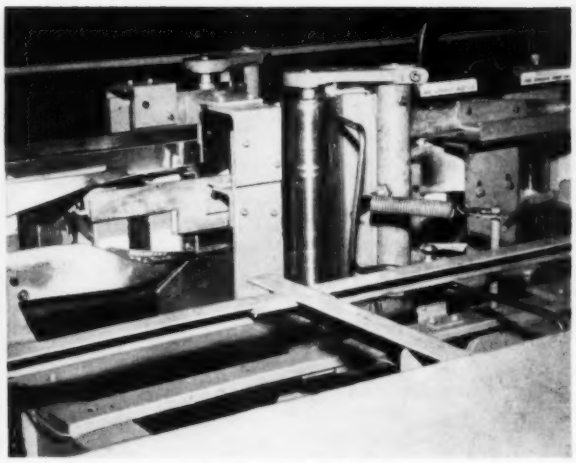
The opened cartons are carried on the carton transport by lugs—two lugs on the outside of the trailing panels and other lugs supporting the lead-



DIVERTER WHEELS divide cartons into two streams for case loading. One lane moves into the case packer without change in elevation while the other moves up an inclined belt over the bottom lane. Four cartons, two on top of two, move into loading position. First stroke of the loading arm deposits four cartons into funnel. As the next group of four cartons is pushed toward the shipping case, the loading arm completes its stroke and moves the entire load into the shipper. The loaded case is then lowered automatically onto the discharge conveyor to complete the operation.



LOADING MECHANISM places a unit load of six cans in carton. Loading slides move the cans into open end of carton. A memory circuit ejects short-count or imperfectly glued cartons before they enter the drying conveyor.



INTAGLIO GLUE ROLL has dots from which glue is transferred to carton flaps in same way as ink in offset printing. Controlled pattern prevents excess glue on edges of flaps, assuring clean flap guides and compression belt.

ing panel on the middle chain of the transport.

Twelve loading slides equipped with pusher rod assemblies operating on an endless chain move the cans off the U-shaped conveyor buckets into the open ends of the cartons in synchronous motion with the carton transport. Four of the 12 pusher rods are acting on the load at all times, so that four complete machine cycles are used for the loading operation, producing a very slow, gentle loading stroke.

After the cans are inserted, glue is applied to flaps at both ends of the filled cartons by the intaglio glue rolls. A constant stream of glue, under positive pump supply, flows down the glue roll and all excess or surface glue is removed by a Formica scraper. Only the small offset holes in the roll retain glue, which is transferred to the flaps in the same manner as in offset printing. The depth and diameter of the "dots" determine the amount of glue applied. There is no excess to be deposited on the flap edges. This assures clean flap guides and compression belt.

Reduction of the drying conveyor to a minimum length of 17 ft.—highly important to crowded brewery operations—is achieved through the use of heat which, in addition to pressure, greatly shortens drying time and makes the drying operation independent of changing temperature and humidity conditions.

The principle of a heated drying conveyor is not new, but the method on this machine is distinctly unusual. Instead of conventional compression belts, the machine uses a plate chain conveyor, consisting of strips of stainless steel attached to conventional chain links. On the return travel (upstream) the chain passes through heating tunnels, where the plates are heated by thermostatically controlled electric strip heaters. The method makes possible safe control of temperature to obtain fast drying time while avoiding excessive heat that might scorch the ink and boxboard. The 17 ft. of conveyor is all that is required at full machine speed for any size of carton, yet it is reported to provide in 15 seconds the drying effect normally obtained in 40 seconds.

To keep pace with the exceptionally high speed of the can cartoners, a case packer has been developed to load almost any desired number of individual cartons into a master shipping carton containing a total of 48 cans. Loaded, sealed cartons are delivered directly from the drying conveyor to the independently driven conveyor of the case packer. As the cartons move to the packer they are turned first to travel lengthwise down the belt and then rotated 90 deg. about the long axis. An inclined V-belt and guides are used for this

(*This article continued on page 186*)

12-UNIT PACKS are handled as easily as six-can cartons by feeding four lanes into machine. Heileman Brewing packs product both ways.

Packaging

1 A new dispenser package for Minnesota Mining & Mfg. Co.'s Scotch Brand home-freezer tape eliminates the need for a separate dispenser and special cutting tool. Tape is simply pulled out and torn across the metal cutting edge that is part of the package, which has a center opening for gripping and two open ends for easy access to the tape. Display carton holds 12 rolls. Dispenser package and display carton, Kaplan Paper Box Co., St. Paul, Minn.

2 Velva furniture caster cups, originally sold by Vanderbilt Products, Inc., as a bulk item, now come in inexpensive multiple-unit cellophane packages. Four casters are mounted on a printed U-board and overwrapped with 45-MS-1 cellophane on a high-speed automatic packaging machine. Printed U-board, Display Printing Co., Brooklyn. Cellophane, Sylvania Div., American Viscose Corp., Philadelphia.

3 Controlled application of Ever-Dry liquid deodorant, product of Ever-Dry Corp., is reported for this new polyethylene bottle fitted with a spray-pad applicator. A few short squeezes moistens the pad for quick, accurate, economical application.

4 Rolled aluminum containers with vapor-vacuum, pry-off closures are currently on trial by the Borden Co. on the West Coast for five varieties of 6-oz. process cheese spreads. The containers come in 12 different glossy colors. Containers, Basea Mfg. Co., Indianapolis. Closures, White Cap Co., Chicago.

5 Welding electrodes, packaged by the Arcos Corp. in paperboard canisters with printed foil labels, combine high moisture protection with eye-appealing brand identity. Foil label is green-and-white rotogravure printed. Label, Milprint, Inc., Milwaukee. Canister, United Can Co., New Village, N. J.

6 Special promotion of Stop & Shop Super Markets Nonfat Dry Milk Solids in this glass container is reported to have produced gratifying sales results. The jar has a wide mouth for easy access. The cap, lithographed in cream, orange, white and blue, harmonizes with the wrap-around paper label. Jar and closure, Anchor Hocking Glass Corp., Lancaster, Ohio. Label, Buck Printing Co., Boston.

7 Whittemore's new Brush-n-Cleaner for suede shoes comes in a rich-looking package designed to appeal to the feminine market. The tubular package is covered with bright blue velour paper, stamped in gold. A dozen tubes come in a display carton pointing up the "Magic Center" of the brush. Cover paper, Nashua Corp., Nashua, N. H. Gold stamping, Hamilton Process Co., Boston. Tube container, Middlesex Paper Tube Co., Inc., Lowell, Mass. Display carton, Bruce Carton Co., Memphis, Tenn.

8 A further improvement in the opening device for Savannah Sugar Refining Corp.'s Dixie Crystal Sugar carton (see "Appetite-Appeal Sugar Cartons," *Modern Packaging*, Dec., 1950, p. 99) is this new reclosure top with rounded flap and slot. Top flaps are glued in eight spots from which glue-repellent ink has been omitted. On opening, sugar is spooned out from the separate waxed inner liner and package is reclosed by inserting the flap into slot. Carton, Robert Gair Co., Inc., New York.

9 A four-can pack was selected by the Pabst Brewing Co. as the proper unit for Tap-a-Cola, a new cola drink marking the company's entry in this field. Both sugar-free and regular versions use flat-top metal cans. Four-can pack is printed on 0.020 bleached manila kraft-backed board with gloss-ink finish. Four-can pack, Alford Cartons, Ridgefield Park, N. J. Cans, American Can Co., New York.

10 The "makings" for martini cocktails—a quart bottle of Gilbey's gin and a fifth bottle of Lejon vermouth—are put up in a take-home woven paper mesh bag by the National Distillers Products Corp. as a "get-acquainted" package deal. Bag, Chase Bag Co., Chicago.

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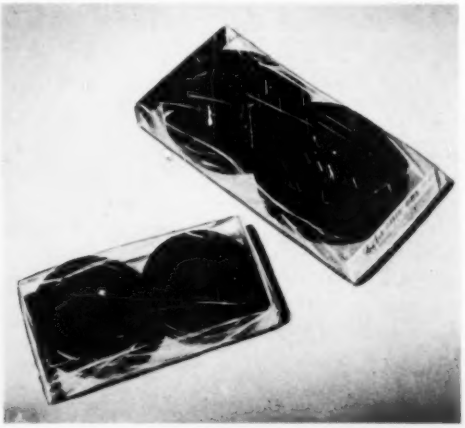

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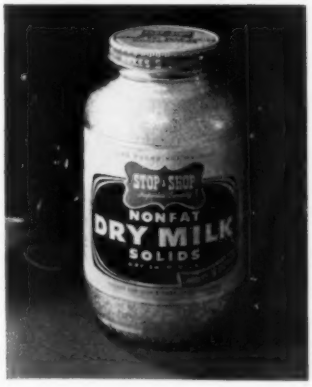

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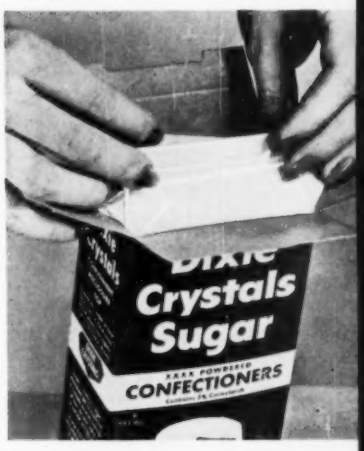

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PROTECTION of new-type cellular divider, shown here in two types of finished Sawyer packages, does not hamper customer's view of product. Blank for oatmeal pecan cookies is shown flat, set up and filled with cookies prior to their insertion into the printed cellophane bag.

Crushproof cookies

Multicell partition set up from a single piece of die-cut board solves problem of displaying fragile items in film bags

In the growing trend toward visibility or "showcase" packaging for easily damaged products such as cookies and other baked goods, the important factor of protection must not be overlooked. Unless the products are adequately shielded against crushing or breakage, a transparent package can actually become a sales handicap, since it permits immediate observation of their condition by the prospective purchaser. Accordingly, most types of cookies utilizing a transparent type of bag or wrapper make use of a backing board, tray or some other form of supporting structure to give shape to the package and enable the contents to withstand normal handling and display hazards.

Sawyer Biscuit Co., Chicago, which last year transferred operations to its ultra-modern new Melrose Park, Ill., plant, formerly made use of slotted die-cut partitions to provide this interior protection for various types of plain and enrobed cookies sold under Sawyer's "Cello-Pak" trademark. Although these partitions, made up of separate strips of paperboard and delivered to the plant "collapsed," or flat, did an acceptable job of protection, they had certain limitations which the company was interested in

overcoming. The partitions had to be opened up manually before the cookies could be inserted in the compartments prior to bagging. Also, since they were composed of a number of interlocking pieces, depending upon the compartment arrangement required, strips sometimes became separated and would slip out of position, either in the finished package or during the bagging operation.

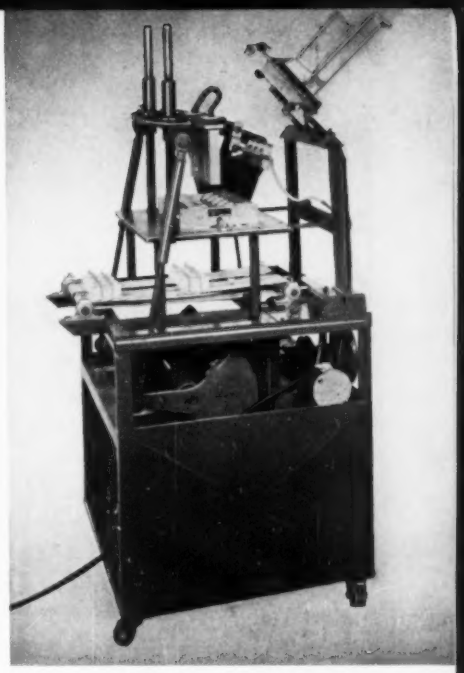
Beginning with a few items on a test basis, Sawyer Biscuit Co. has gradually replaced the conventional slotted partitions of these packages with a new type of patented one-piece compartmented unit having a number of superior features. This new-type package construction, technically identified as a tray, is covered by U.S. and Canadian patents. It has proved so successful that Sawyer now uses it, in various sizes, for a wide variety of cellophane-wrapped cookies ranging from the popular oatmeal type to creamy Sudan Bon Bons and Assorted Fingers. The same style of package is also employed by all the biscuit divisions of the United Biscuit Co. of America, of which Sawyer is a part.

According to United Biscuit, use of the new package construction has resulted in an over-all saving of approximately 15%, made possible through more efficient employment of personnel, savings in paperboard, reduction of storage space required for the one-piece blanks, and other factors. In addition, the new packages, encased in cellophane, permit maximum visibility of contents, afford superior protection to the cookies while identifying them immediately and have proved their sales appeal in supermarkets and other types of retail food outlets.

The heart of the new Sawyer package is the one-piece inner tray, so designed that when the die-cut flaps are folded into a vertical position, they automatically engage the integral longitudinal strips to form rigid individual compartments. Each compartment holds one or more cookies, depending upon the shape and size of the items being packed. The compartmented arrangement minimizes shifting and contact between the cookies, thereby virtually eliminating any chance of crushing or breakage. For some types of cookies, the blanks are so designed that the compartments are slightly deeper than the goods to be packed, causing the cellophane outer wrapper to bridge the cookies and enclose them within individual compartments, with none of the pressure of the wrapper or bag bearing against them. Thanks to this feature, the packages may also be stacked high in store displays, since the rigid paperboard framework actually carries the strain instead of transmitting it to the easily damaged cookies.

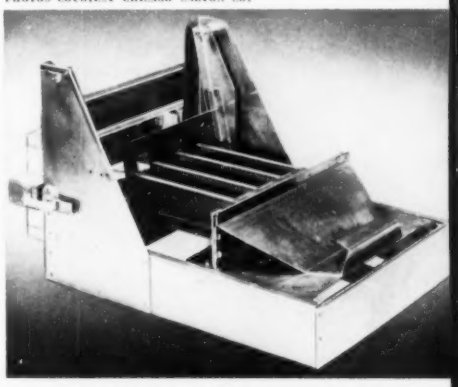
Die cut for Sawyer from 22- or 24-point bleached sulphite board, the inner blanks, after the forming operation, are extremely rigid and do not depend upon the outer wrapper to prevent shifting or twisting. This feature is an advantage in the home, since even after the cellophane wrapper has been opened and some

(*This article continued on page 184*)



AUTOMATIC FORMING machine requires only remote control and will set up 3,600 of the patented dividers per hour.

PHOTOS COURTESY CHICAGO CARTON CO.

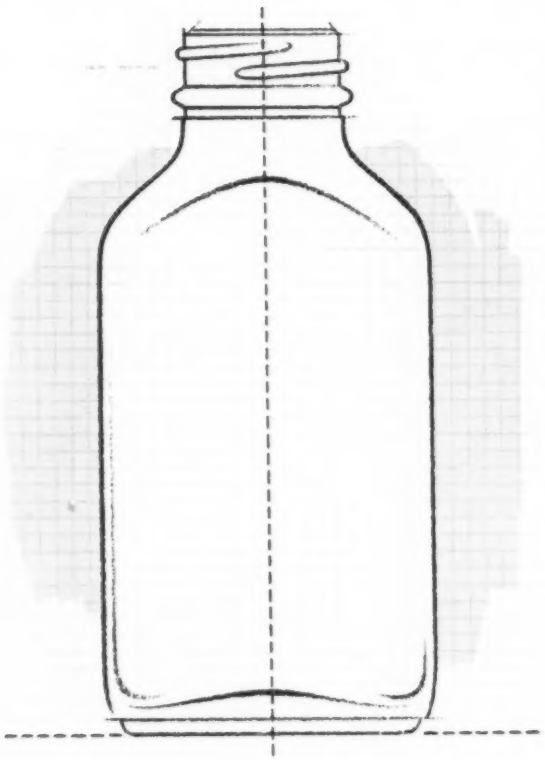


MANUAL DEVICE, also used by Sawyer, produces 1,500 dividers an hour with one operator.

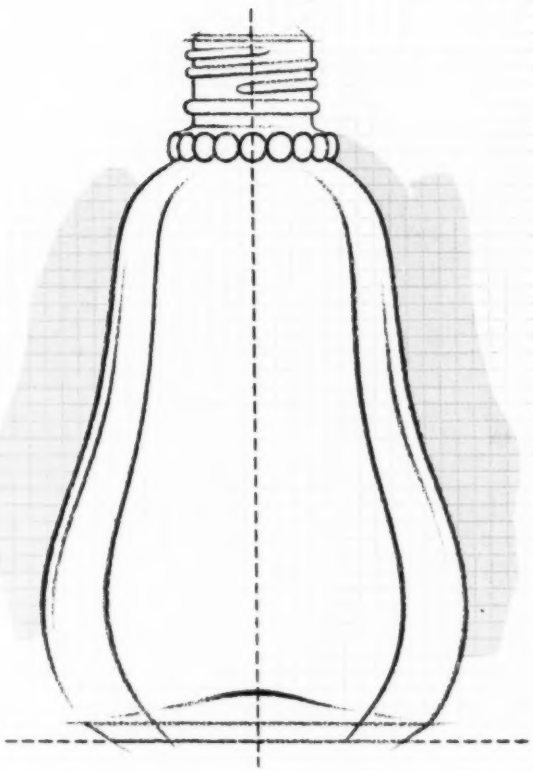
JUMBLE DISPLAYS and high stacks in supermarkets are made practical. The partitions protect the cookies from crushing or breaking and keep them salable, yet they afford full product visibility.

BAGS ARE FILLED on mandrel as cookies, hand placed in divider trays, move to operator on conveyor line. Heat-sealed saddle label completes package.

What makes a package



The precision touch
of the package engineer



The creative imagination
of the designer

a SALESpackage?

Any one of these may hold the answer to your problem

The right answer is usually a combination of these various factors

The Owens-Illinois method of systematic exposure of packaging problems to the engineer, the designer and the marketer assures you the maximum in consistent delivery of top packaging values.

The retail know-how of the merchandiser

DURAGLAS CONTAINERS
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

Contest display produces prospects

The Hoover Co.'s wishing-well display for the company's electrical appliances has a novel gimmick. It serves a dual role, doubling as a store contest piece and as a general window or store display.

Women customers get paperboard "Wishing Well" coins from the store clerk to enter the contest. They write their name and address on one side of the coin and their "wished for" appliance on the other side, then drop the coin into the paperboard bucket that is part of the display piece. At the close of the promotion a "coin" is drawn and the winner receives the Hoover appliance of her choice. The dealer then mails the coins to husbands of non-winners, suggesting how they can make their wives' wishes come true by buying the "wished for" but "non-won" appliance.

The display, realistically lithographed in full color on paperboard, comes with a separate "Win a Perfect Gift" card that is attached to the front of the display during the contest promotion and is removed when the unit becomes a conventional display. The dealer fills the "well" section of the display with Hoover electrical appliances of his choice.

CREDIT: *Display by Einson-Freeman Co., Inc., Long Island City, N. Y.*

DISPLAY

Trademark-shaped triangle

The growing "do-it-yourself" market prompted the introduction of this colorful triangular display box by Behr-Manning Corp., which tells at a quick glance the complete sales story of its home-craft masking tape. Large, easy-to-understand line drawings illustrate the four basic applications of the tape—for painting, striping, sealing and mending.

The unit has what amounts to three sides—two edges of the triangle and the stand-up top—in full view of the customer. The triangular shape of the paperboard merchandiser conforms to the triangular shape of the company's long-used trademark design featuring the whimsical drawing of the "Behr-cat," reproduced here on the riser piece of the carton. The tape, which comes in 1½-in. width, is wound on 1-in.-diameter cores with metal side plugs.

CREDIT: *Display carton by Robertson Paper Box Co., Inc., Montville, Conn.*

Summer bin sells suntan lotion

A timely, attention-compelling summer promotion is the J. B. Williams Co.'s floor unit for jumble display of Skol suntan lotion. Glamour is provided by the figure of a pretty suntanned girl in a bathing suit, which dominates the back riser piece of this self-service merchandiser.

Designed for use in drug stores, supermarkets and other self-service outlets where Williams products are sold, the floor stand measures 30 by 15 by 15 in. and holds a full case (48 bottles) of Skol. The bin section of the unit is made of tan-colored corrugated board, two-color printed from rubber plates in orange and black with high-gloss inks. The riser piece is made of paperboard, die cut and lithographed in full color. Copy is kept to a minimum. A large reproduction of the Skol bottle and the legend, "Tan gloriously," appear on all sides of the bin, as well as on the riser piece. Remaining copy points out that Skol is "Used by more people than any other suntan lotion" and "prevents painful burning, not oily, not greasy."

CREDITS: *Design by Einson-Freeman Co., Inc., Long Island City, N. Y. Bin section supplied by Display Div., Gibraltar Corrugated Paper Co., North Bergen, N. J. Riser piece supplied by Einson-Freeman.*

GALLERY

Three-way displays for two selling features

Three six-color lithographed display pieces dramatize selling features of the W. A. Schaeffer Pen Co.'s Snorkel pens—"16 Interchangeable Points" and "Touch Down-One Stroke Filling Action." Largest of the pieces is of two-plane construction with a separate die-cut arrow spot glued to stand out in third dimension. The arrow is held in place by an extra tab formed into a box, which gives the dimensional effect. Another tab at the tip of the arrow inserted in a slot further secures the arrow in position. A similarly designed smaller display unit is of flat-plane construction. Both units have single-wing chip easels. The third piece of the promotion is a small self-easeled merchandising card designed to hold an actual Snorkel pen. The unit is scored and folded to create an illusion of dipping the pen in an inkwell to show how easily it may be filled.

CREDIT: *Display by Forbes Lithograph Mfg. Co., Boston.*

THRIFTY SELF-SELLER

Mechanized strip packaging of two-piece picture hangers yields a better, more appealing package at 25% lower cost

The manufacturer battling competition so strenuous that he dare not raise prices is in particularly bad straits in inflationary times. He watches his profits shrink in inverse ratio to inexorable rises in his operating costs—raw materials, labor and overhead.

If he can't raise prices, then the only solution is to cut costs or sell a bigger volume—or both. Moore Push-Pin Co. of Philadelphia saw an opportunity in packaging to do both. In capitalizing on that opportunity it tied onto a trend that offers limitless possibilities for small, hard-to-handle products.

Moore's principal product is the tiny, goose-necked picture hanger with a slot which insures that the nail will be driven into the wall at the correct angle. It would seem hard to improve upon the product; it is so successful, in fact, that it is widely imitated, now that patent protection has ceased. How, then, to get an edge on competitors? Moore thought it could do so by developing a more convenient and more appealing package, better suited to display on crowded variety and hardware store counters.

The excessive cost of labor in the traditional method of assembling rows of these tiny hangers, each attached by its nail through the slot to a die-cut sliding platform in a small transparent-windowed box, had long bothered the company. It was an operation obviously impossible to mechanize. Yet the principle of keeping the right-size nail securely with the right hanger until the moment of use had to be followed to avoid mistakes. And visibility of the hangers, to insure selection of the right size, was essential.

The management had observed the recent development of a number of different types of automatic and semi-automatic machines to do unit or strip packaging in transparent film and had noted that these were being increasingly used in the hardware field to provide compartmenting of small parts with the right nuts, bolts, screws, etc.

Could one of these machines be adapted to feed and seal one hanger and one nail together?

It could—and thereby arose the prospect of eliminating all that hand labor.

Such a package would certainly provide convenience for the user, for a single hanger and nail could be torn off for use as needed, with the rest remaining sealed and protected. But what about convenience for the dealer—and what about display of the brand name and easy maintenance of a complete range of sizes?

The answer to these problems was the stapling of the cellophane strip package, at its base, to a match-book-type paper catch cover, effectively printed, with a little punched hole by which the covers could be hung

COMPLETE ASSEMBLY of picture hanger and nail is sealed in each compartment of cellophane strip and can be torn off as needed. Strips of two to eight hangers are stapled in paperboard catch cover. This simple, machine-made package replaces box with platform in which each hanger and nail was placed by hand.

on arms of a compact wire counter-display rack. The back, or display face, of the catch cover is die cut in window style, to show the hangers singly or in a group.

As a collateral benefit, savings were found in the sizes of shipping cartons and cases needed to hold the new package.

Altogether, Moore Push-Pin Co. now has packaging that is about 25% cheaper to produce and which, at the same time, is obviously handier for the consumer to use, has the appeal of really modern packaging and—judging from the initial reception—will make a big hit with dealers.

Before Moore took these steps its output of picture hangers was hand packed in the small paperboard window boxes by about 25 women employees. With three machines that can put four different types of hooks and nails in individual compartments in cellophane strips, the company can slice the figure to just five employees. On this basis, savings to the Moore company in labor alone are judged to be about 25%.

The new catch-cover packages are flatter and take up correspondingly less room in shipping containers. The difference in size, most noticeable on the 50- and 100-lb. hooks, is estimated by Moore to average between 20 to 25%.

The previous tiny window boxes, in addition to having little display value, were a nuisance for dealers to handle. In variety stores, where counters can be sectionalized into small spaces and are constantly attended, this type of package is acceptable—but hardware dealers don't like them and they are apt to neglect their stock and run out of certain sizes. With the new folder, arranged on arms of the display rack according to size, it's immediately apparent when a certain size runs out. The stand-up rack catches the shopper's eye; the contents of the package can be more easily and more completely examined, and the sure seal of the cellophane strip discourages customers from opening the package and pilfering a couple of hooks at a time—a real hazard in self-selection selling. As a matter of fact, with the previous package whole boxes were subject to pilferage; it is not so easy to slip a folder off the rack without detection.

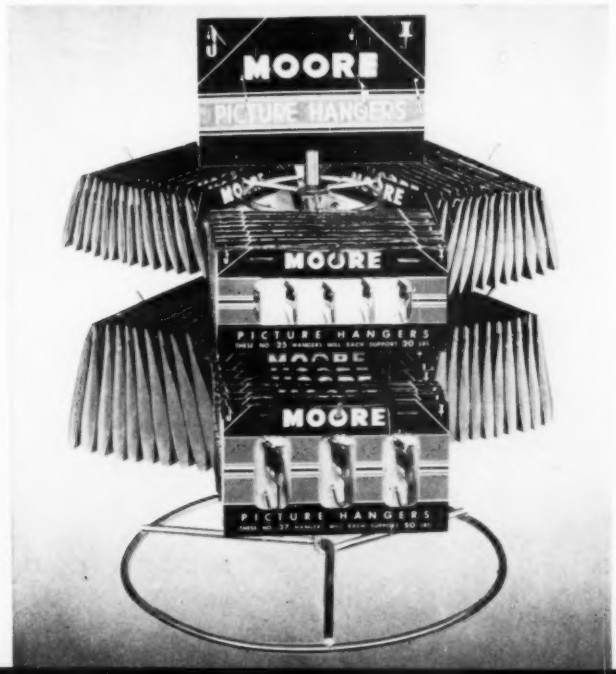
Lest automatic strip packaging of this type of item sound like too easy a proposition, it's only fair to mention that Moore and the machinery manufacturer had to sweep away many obstacles. Consider one problem: that of filling a cellophane pouch, not with just one item, but with two—the picture hook and the nail. A system was needed to time the flow of both items accurately to the package-forming apparatus on the machine. Worst of all, things as small as hooks and nails are elusive and have to be dealt with gingerly.

Trial and error led to the system that's now employed in the plant. Using a standard type of automatic filling and forming equipment, the company made a few adaptations for the tough job of selecting and positioning hooks and nails. Four sizes of picture-hook assemblies are handled

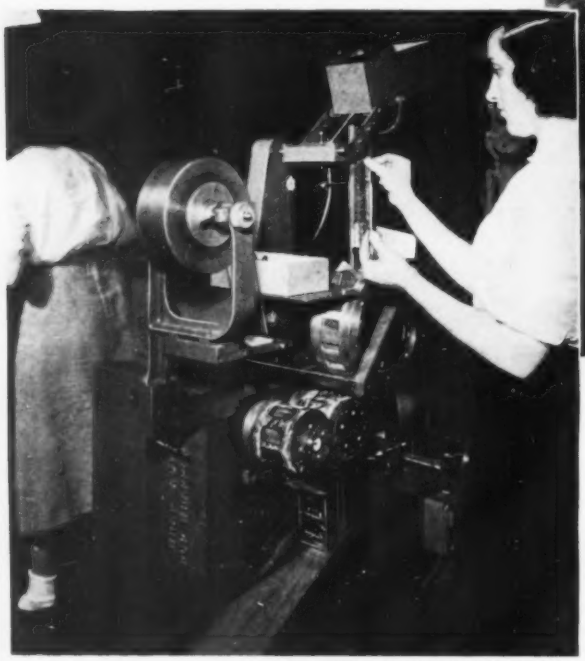
PHOTO COURTESY MOORE PUSH-PIN CO.

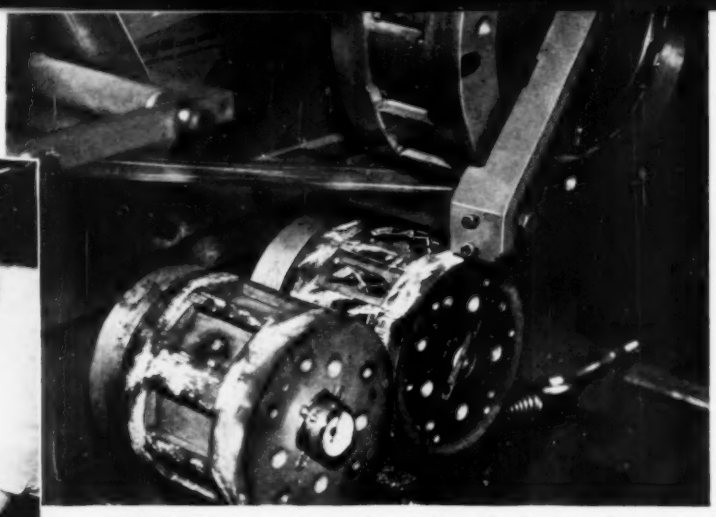
CONTRAST of simplified, better-identified new folder pack with old platform box. With old package, as many as eight tiny hangers had to be attached with their nails to platform by hand. Labor force has been cut from 25 to five. There is saving also in smaller new dozen carton.

REVOLVING RACK gets new package up off the counter, minimizes space requirements and simplifies inventory, since each arm holds one size of hanger. Packages are hung through a hole cleverly punched through second "o" in "Moore." Note open, die-cut windows that give view of cellophane-sealed product.



Strip-packaging machine at work





CLOSE-UP of counter-rotating sealing wheels shows hanger and nail in each compartment between two webs. With appropriate feeders and wheels, machine can handle any small items.

TWO PARTS ARE FED—nail from vibrating hopper, hanger from rack—automatically to each recess on large revolving wheel. First cellophane web comes up from roll at rear below, over turn bar at rear of product wheel, and carries products down and under. Second web comes down from upper left, joining first web as it leaves product wheel. Completed strip then moves through counter-rotating wheels for heat sealing, discharge and cut-off.

PHOTOS COURTESY SYLVANIA CELLOPHANE.

by three machines, one machine being large enough to run both the 50- and 100-lb. hooks while the other two handle the 10- and 20-lb. hooks.

The feed mechanism was worked out by Moore in collaboration with the supplier. In the ordinary strip-packaging machine, such as is used for tablets, the product drops between two converging strips of cellophane as they are drawn together between two heat-sealed roller dies. These heated dies are recessed where the pocket in the strip is to be formed. One item is dropped, usually, in each pocket. Moore's problem was different—to orient two products uniformly in each packet of the strip. Simultaneously feeding two items in the same manner as a single one would inevitably develop production tangles.

With Moore's techniques, the nail part of the assembly originates from a vibrating hopper which jockeys the nails into feeding position. They wind up hanging through a slot on the bottom of the hopper and eventually drop into a brass tube which has a latch device to release one nail (pointed the right way) into each recess on an assembly wheel.

While this is going on, the hook part of the assembly, a tougher problem, is loaded by an operator on a simple feed bar. A hook is dropped into the same pocket on the assembly wheel after each nail is fed. Actually, each pocket on the assembly wheel has two parts—a slightly cupped portion to hold the nail and another section for the hook.

As each recess in the assembly wheel rotates to the up position, a nail is dropped in, the wheel turns a bit and a hook drops in. Nails are dropped in first while part of the recess is slanted somewhat so the nails are always on the same side of the hook in the finished package. With the assembly in place, the wheel continues to turn, but before it can spill out its contents, the pocket is closed over by a strip of cellophane fed from a roll. The cellophane strip holds the parts securely in place as the wheel turns. When the wheel reaches bottom position, the parts are riding free on the cellophane strip, which leaves the wheel horizontally. But at this point a second web of cellophane joins the bottom strip and the two strips hold the pair of objects firmly between them. Immediately the pair of strips enter the usual sealing wheels and a cut-off of unit packs is made at a pre-determined number.

Hand feeding of the hooks enables a production rate of about 10 three-hook packages per minute and fully automatic feeding, now being developed, will, at the very least, double this rate, it is expected. Automatic feed will be of the greatest help in increasing the speed of the machines handling the smaller-size hooks, which are harder to manipulate by hand.

Assembling the sealed strips and stapling them in paperboard folders is automatic. Along with stapling of the strips, the hole is punched in the paperboard folder—in the center "O" of the Moore name—on a combination stapler and punch machine. The wire display rack is a revolving stand for quick inspection of all four sizes. Its capacity is 72 packets of assorted sizes.

CREDITS: *Strip-packaging machine by Wrap-Ade Machine Co., Inc., 83 Valley St., Belleville 9, N. J. Cellophane by Sylvania Division, American Viscose Corp., 1617 Pennsylvania Blvd., Philadelphia 3. Paper catch-cover folders by Boice Folding Box Co., 4234 Ogden St., Philadelphia 4. Shipping cartons and cases by Robert Gair Co., Inc., 155 E. 44 St., New York 17; Container Corp. of America, 38 S. Dearborn St., Chicago 3; Connelly Container Corp., Delaware Ave & Morris St., Philadelphia. Wire stapler and punch by Acme Staple Co., 1643-1647 Haddon Ave., Camden 3, N. J. Revolving display rack by Central Wire Frame Co., Inc., 218 E. 26 St., New York.*

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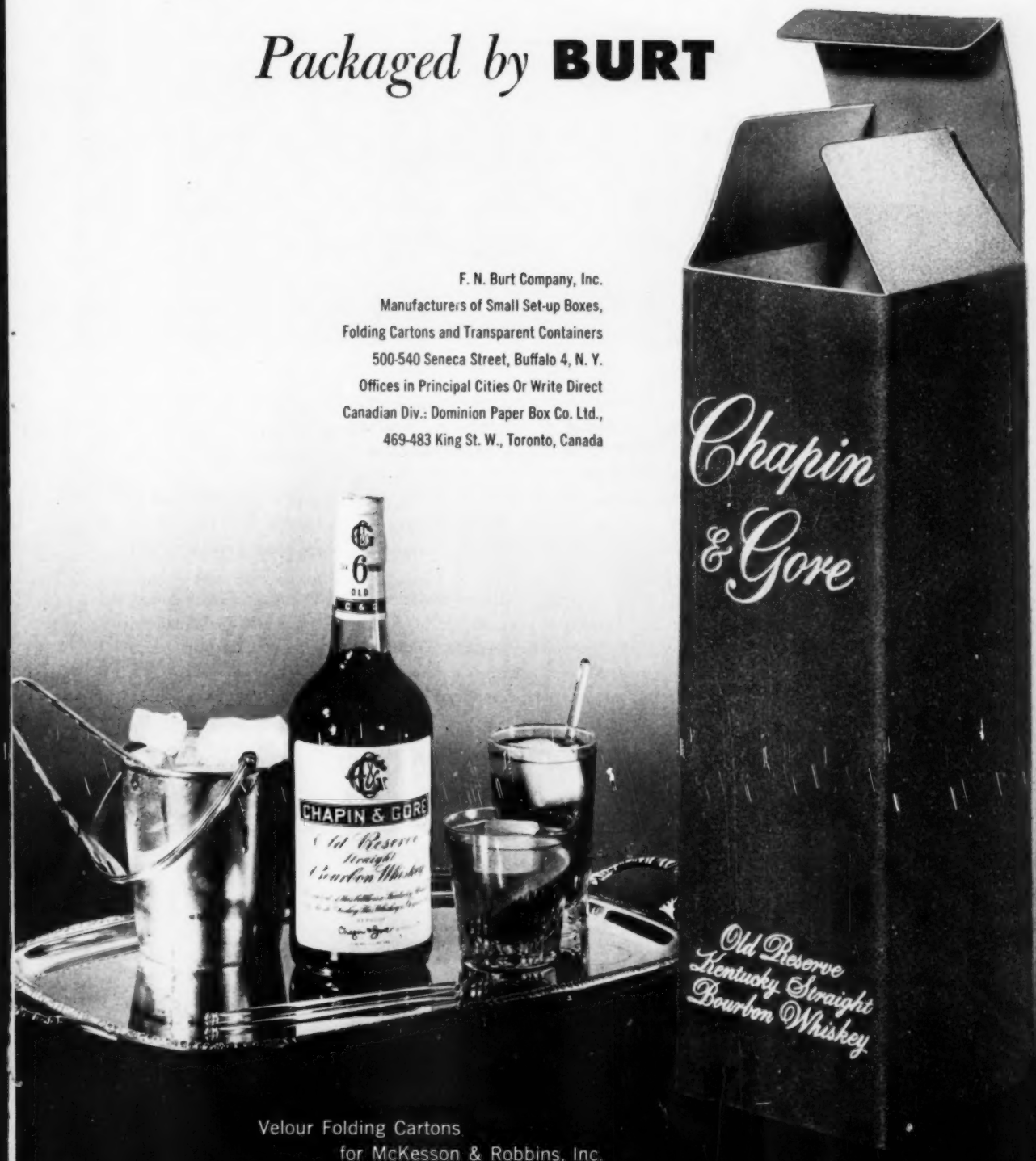

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Shock test for plastic films

A simple reproducible method of detecting flaws that may cause failure of polyethylene and other bags.

By JOHN G. McMILLAN*

The rapid growth of the use of polyethylene as a packaging film in the last three years has brought along some growing pains as well as great progress. As new end uses and fields of successful application for this film opened up, it became apparent that more critical evaluation of the film was essential.

In many instances repeat orders for previously successful end applications of polyethylene film would fail in the field. This condition seemed to aggravate and grow worse as the production tonnage for polyethylene film usage went up. Conditions were particularly bad in the latter part of 1952 and early 1953. Scarcities of good raw polyethylene flake for film prevailed. Polymerization plants and extrusion plants were strained to utmost capacity and the converter was often called upon to deliver film slightly too light in gauge for the contemplated end use merely as an expediency in getting the job done as best he could.

The converter's position is somewhat unique in this maelstrom and turmoil of expanding production facilities for flake and film and expanding markets and applications, for the converter is but one step removed from the ultimate field of performance of the film. The converter consequently hears about trouble in the field very fast, but in many cases he is hundreds of miles away and powerless to do anything except make replacements and hope with his fingers crossed that the replacements will be of the original high-performance type of film with which he had satisfied his customer before.

It became apparent that some means of pre-checking film by the converter was essential to avoid excessive losses and to preserve the good name of polyethylene film with the buying public. In our own plant, matters were brought to a head after hearing one of our sales representatives describe his eye-witness observation of 75% splitting failure of some polyethylene bags at a loading station at which we had previously supplied three very successful deliveries

1. PROCEDURE of test. Bag is held by top, with specified load of sand distributed evenly across bottom of bag, and dropped a specified distance to a hard, smooth surface. Height and number of drops the bag will sustain without bursting determine shock strength.

* Consulting chemist, Howard Plastics, Council Bluffs, Iowa, and Associate Professor of Physics, University of Omaha.

2. TYPICAL RESULT. Gourd-shaped swelling at base of dropped polyethylene test bag shows fairly uniform stretching of film. This indicates a good film.

of bags of the same size and thickness of film, and from the same original source of film. Obviously this type of trouble had to be checked earlier in the production cycle, for even if we received complete replacement of good film from our source of supply, this would account for only a part of the cost to us in fabricating, printing and converting the film. The cost to the industry as a whole in creating a bad name for polyethylene film could not even be estimated in dollars and cents.

The management of this company established liaison with five of the major extruders of film and set up an evaluation program in cooperation with our sources of supply. Our laboratory was presented with the problem of establishing some test procedure whereby really good film could be distinguished from film which looked good and tested good under existing test procedures, but acted far differently in the field.

Evolving a test procedure

Various tests were devised and tried out in the laboratory and it was apparent very shortly that test procedures based on small, select pieces of film of minor area were unreliable. A failure any place on the entire package, envelope or wrap of polyethylene constitutes failure in the eyes of the purchaser of the end product. Most existing standard laboratory tests are based on small area, select pieces of film; so a departure from normal procedure was made in trying to construct a test based on the total area of polyethylene involved for a given-sized bag. Test loads of various substances were loaded into the finished bag of polyethylene and dropped measured distances. Liquids (such as water), rubber balls, fine marbles and shot all were extensively tested before finally deciding on sand as the test load material.

Sand has density as great as anything apt to be packaged in polyethylene film in bulk amounts. It is also inexpensive and easy to obtain. Test loads of sand may be easily transferred from one bag to another and the sand is re-usable without creating much mess. Water gives a fair test, but is less dense than desirable and also quite messy without fairly elaborate equipment.

Below is detailed a tentative procedure for this type of test, along with a test chart (Table I) of bag sizes and drop distances. The test in its present form needs additional refinement and revision, but at the present writing it has proved workable and useful in separating poor shock-resistant film from really good film.

The procedure

The specified weight of sand (dry, clean and sifted through a U. S. Standard #20 sieve) is loaded into the specified bag. The bag is cross sealed at the top, entrapping a minimum of air. The bag is held by the top and the load of sand distributed evenly across the bottom of the bag, as shown in Fig. 1. The bottom of the sand load is lined up with the specified drop distance. The bag is allowed to come to rest at the plumb position and is dropped end on, without initial component of velocity. The freely falling bag is subjected to shock impact by permitting it to drop on a smooth, hard, non-shock-absorbing surface such as a smooth steel plate or a smooth Masonite floor of a rigidly backed-up sand box.

A good shock-impact test should be

3. TYPICAL FAILURES encountered in polyethylene films. Sample on left has gray paper bridge extended clear through bag and out splits in gussets to show typical sharp splits on both outer gusset folds. Sample on right, with dark paper insert for photographing purposes, shows small face tear, with stretched material along the edge of the tear. Sample at right is a better film than that at the left.

sufficient to stretch or distort the film without overdoing it to the extent that even very good film would rupture. Fig. 2 shows typical distortion of good film after a test drop. The test load should always be greater than the contemplated end-use load for the bag. It is desirable that the test be conducted at normal room temperatures of from 68 to 74 deg. F. There is evidence that false results were obtained when a shipment still cold from transportation temperatures was checked immediately without allowing time to condition the film to room temperature.

Inspection for failure

Good material should always withstand the minimum test without rupture. When rupture occurs it should be examined to be sure that the weakness was in the material rather than in faulty sealing, etc. A clean-split rupture is worse than one with stretched material along the edges and a full-length split usually indicates a less shock-resistant grade of film than a short split. Clean splits along the folds of gusseted or lay-flat tubing are worst of all.

The direction of split or tear should be noted. It will usually be parallel to the extrusion axis. Failure of a test sample along an obvious flaw in the material, such as a string of fish eyes or inclusions, should not constitute evidence for rejection of an entire shipment or roll unless the string of fish eyes or gels is found on inspection to be throughout the entire shipment or roll, or at least throughout the bulk of the material in question. Fig. 3 shows typical kinds of failure encountered in film.

Charting results

The typical test chart shown as Table I was constructed empirically utilizing the M.K.S. or metric system of units. If desired, it can readily be converted to the foot, pound, second or British Engineering System of units by merely multiplying the kilograms of test load by the factor 2.2 to convert to pounds and by multiplying the meters of drop distance by the factor 3.281 to convert to feet.

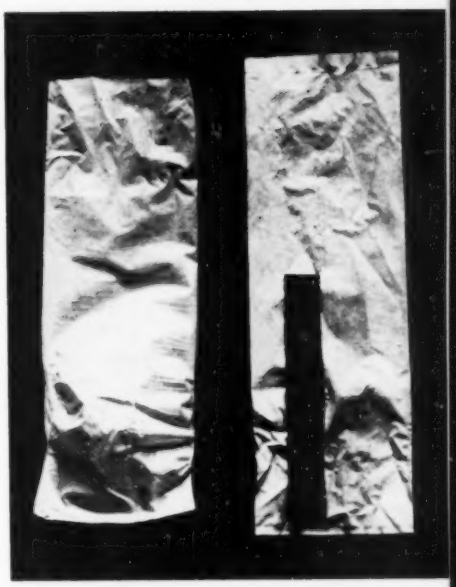
Of necessity, the construction of the test was empirical, because there were no prior data on what could be expected of good film in such a procedure. We had available film from widely varying sources and of many different sizes and thicknesses. The test was constructed on the basis of what the very best film we had available in a given size would actually do by way of shock test. We then lowered our minimum drop distance to a point which we thought would be satisfactory for most applications in the practical field.

The test load of sand might be thought of as a semifluid in this application. Although it is not a true fluid and therefore does not transmit pressures equally in all directions, the sand does exhibit enough of the properties of fluidity to transmit vertical pressures into lateral pressures fairly evenly as the result of impact and inertia. The vertical head of sand in the bag is an important factor, as well as the weight of sand, so that a bag with a large cross-sectional area will withstand much greater weight loading for a given thickness of material than will the bag of smaller cross section.

The kinetic energy dissipated at the moment of shock impact is approximately proportional to the product of the test load and the drop distance. The amount of shock stress to which the film is subjected is determined by the time rate of change of momentum and is based on the following basic equation:

$$FT = MV_2 - MV_1$$

The force times the time the force acts on the film is equal to the product of the mass of the falling bag times its final velocity minus the product of the mass of the falling bag times its velocity at moment of impact. In ordinary garden-variety English this simply means that the shorter the time involved in stopping the moving bag and sand at impact, the greater will be the force brought to bear on the film. This also points out one of the greatest advantages of good polyethylene film. Since the film gives some at moment of impact and acts as a shock absorber by requiring a little more time to slow down the moving sand to zero velocity, the forces exerted on the film are less than they are on a more rigid type of film subjected to the same treatment. At moment of impact the film is subjected to an almost-explosive tension stress around its entire diameter at the base. As a consequence, any orientation splitting tendencies or any weak points due to poor folds, creases, die-line flaws or sudden inconsistencies of gauge are subjected to sudden shock stress and the film ruptures or fails at these points just as the weak link in a chain breaks with a sudden jerk.

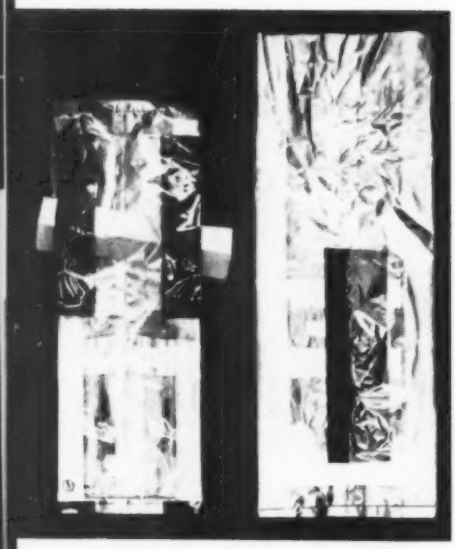


4. DIFFERENCES in shock resistance of polyethylene film from same extruder. Both are white opaque, 3-mil, 3.5-in. lay-flat tubing. Sample on left took six consecutive 3-meter drops with 1-kilogram load. Sample on right, with same load, split on first drop at 1 meter. (Black paper insert in region of failure shows split edge of film.) Repeat tests conducted on film from these same two film batches produced similar results.

Improvements attainable

The extruders of tubular film and sheeting have already done a tremendous job in improving the shock resistance of polyethylene film and work is forging ahead on this and other films so that even better films will be available in the future. It might be of interest to make some actual comparisons for the record, however:

Extruder	A	Early 1953 material, 24 rolls of 6-by-3 0.0015 film, 24 rolls failed minimum.
"	A	March 1954 material, 10 rolls of 6-by-3 0.0015 film, 10 rolls passed maximum.
"	A	Early 1953 material, 75 rolls tested, 70 failed minimum.
"	A	Early 1954 material,



5. EFFECT OF CONVERTING on shock resistance. Sample at left, with gray paper bridge thrust clear through bag to show splits in gusset folds, failed because of overlay printing and varnishing clear around and over gusset folds. Sample at right, with black paper insert at region of failure, shows failure along longitudinal back seal of bag due to improper heat sealing.

35 rolls tested, 35 passed maximum.

Extruder B Early 1953 material, 11 rolls tested, 11 rolls failed minimum.

" B Early 1954 material, 6 rolls tested, 6 rolls passed minimum.

Fig. 4 illustrates differences in shock resistance of two samples of film, supposedly identical, from the same extruder.

When using the test, it is desirable to work with the extruder and keep him well informed. Often it is possible to utilize material that tests slightly weak in end applications requiring a minimum of shock strength, such as bags for soft goods, gloves, etc. If bulk loads such as flour, unpopped popcorn, potatoes or apples are contemplated, it is advisable to pay a great deal of heed to shock strength of the film.

Film thickness is often misleading in regard to shock strength, for we have tested 0.00125 film which showed four times the shock strength of 0.0015 film of the same size, but obtained from a different source. If all other factors are constant, such as type of resin and extrusion process, then we find that shock strength does increase with film thickness.

The general over-all quality of polyethylene film has improved in the United States during the past two years, but we can remember testing film extruded at prior dates wherein the film split when the sand test load was poured in the bag before it had received a single drop.

Test as a tool for converter

The shock test has proved quite useful as a means of localizing points of origin of trouble in the converting plant. Indeed, by utilizing the test before and after certain operations in the process of converting film, it has been possible to show that in certain cases the converter has degraded the shock resistance of film in his manufacturing procedure. Once the source of the trouble has been determined, machinery may be redesigned or modified to eliminate damage to film.

The most effective types of converter use of the test might be listed as follows:

1. The control of incoming shipments of film by spot checking roll samples.

2. The checking of back seam and end seals of production bags. Bags dropped end-on test the longitudinal back seal, whereas bags dropped sideways can check end seals.

3. The checking of film before and after printing and varnishing.

4. The checking for shock degradation in certain types of pre-printing treatment.

5. Examination of film for shock degradation as a consequence of passing over certain types of forming shoes or in tubing and rewind operations.

A typical example of the type of results encountered is shown in Fig. 5 wherein the shock resistance of a bag has actually been decreased as a result of printing with a two color overlay followed by a layer of varnish and with the printing extending clear around the gussets. Of necessity, low-plasticizer inks and varnishes must be used in this type of printing to avoid offset in the gussets during storage of the bags. Sometimes the varnish and ink layer will not withstand the 180-deg. flexing at the gusset fold without damage. As a result, the gusset folds are not as strong as the flat printed surface of the bag whereon the ink and varnish layers have maintained their integral structure. On shock test there is a large shock-stress concentration at the weakest points of the gusset folds and splitting failure occurs. If the same bag is tested so that the unprinted area of the bag receives the shock, it will take a good test, since all of the film tends to give a little simultaneously without the build up of any severe points of shock-stress concentration.

Test as a tool for extruder

Perhaps the greatest improvements in the quality of polyethylene film to date in regard to shock resistance have come about as the result of the diligent and painstaking work of the extruders in conjunction with this type of shock test. Dies have been improved and redesigned. Take-aways have been reworked. Temperatures and pressures where the extruded film is first nipped have been carefully studied. In the converting laboratory we can gauge the progress of these improvements as we measure the quality of the incoming film. By cooperating with the extruders we can make suggestions even though we are not permitted in most cases to witness the carefully guarded secret methods of the modern extrusion plant.

Some obvious points wherein the shock test can serve the extruder well as an analytical tool are as follows:

1. As a basic laboratory control of the shock resistance of his outgoing shipments of film.

2. As a tool in studying the effects of different orientation and extrusion procedures on shock resistance.

3. As a tool in studying the effect of aging, both prompt and delayed, on the shock resistance of extruded film.

4. As a tool in making studies of the statistical variation of shock resistance from one end of a roll to the other in continuous lengths of extruded film.

5. As a criterion in selecting the proper flakes and resin blends for developing the best shock resistance in film.

6. As a means of running short-time and long-time extrusion profiles on various extruders and extrusion procedures to maintain a log on extruder operation and to develop some insight as to when, why, what and how some of the variations creep into the art of extruding film.

An extrusion profile (Fig. 6) run by

TABLE I—CHART OF TEST BAG SIZES, TEST LOADS AND DROP DISTANCES

Bag size (in.)	*Gauge*	*Test load (Kg.)*	*Minimum drop distance (meters)*	*Repeated drops withstood by first-quality film*
3 x 12	0.0015	0.7	1	1, then 2 meters
3.5 x 12	0.0015	1	1	1, then 2 meters
3.5 x 12	0.002	1	1, or 2 meter special	1, then 2, then 2.5 meters
4 x 12	0.002	1	2	1, then 2, then 2.5 meters
5 x 15	0.002	2	1	1, then 2, then 2.5 meters
5 x 18	0.003	3	1	1, then 2, then 2.5 meters
6 x 12	0.00125	2	1	1, then 2, then 2.5 meters
6 x 12	0.0015	2	1	1, then 2, then 2.5 meters
6 x 16	0.002	3	1	1, then 2 meters
6 x 16	0.003	4	1	1, then 2 meters
7 x 12	0.0015	2	1	1, then 2, then 2.5 meters
7 x 12	0.002	2	1	1, then 2, then 2.5 meters
9 x 15	0.0015	3	1	1, then 2, then 2.5 meters
10 x 12	0.0015	3	1	1, then 2, then 2.5 meters
11 x 15	0.0015	4	1	1, then 2 meters
11 x 15	0.0025	5	1	1, then 2 meters
12 x 18	0.002	6	1	1, then 2, then 2.5 meters
13 x 18	0.0015	6	1	1, then 2 meters
14 x 18	0.002	6	1	1, then 2, then 2.5 meters
14 x 26	0.002	9	1	1, then 2 meters
18 x 24	0.0015	6	1	1, then 2 meters
8 x 12	0.0015	2	1	1, then 2 meters
4 x 2 x 12	0.0015	2	1	1, then 2, then 2.5 meters
5.25 x 2.25 x 15	0.0015	2	1	1, then 2 meters
5 x 3 x 15	0.0015	2	1	1, then 2, then 2.5 meters
6 x 3 x 15	0.0015	3	1	1, then 2 meters
6 x 3 x 18	0.0015	3	1	1, then 2 meters
8 x 3 x 15	0.00175	6	1	1, then 2 meters
8 x 4 x 15	0.0015	6	1	1, then 2 meters
8 x 4 x 15	0.002	6	1	1, then 2, then 2.5 meters
9 x 4.5 x 15	0.002	6	1	1, then 2 meters
15 x 12.25 x 36	0.0015	10	1	1, then 2 meters
4 x 3 x 15	0.0015	2	1	1, then 2 meters
5 x 3.5 x 15	0.0015	2	1	1, then 2 meters
5 x 2 x 15	0.002	2	1	1, then 2 meters
10 x 6 x 26	0.004	15	1	1, then 2 meters

our laboratory on a particular shipment of film in which 16 out of 21 rolls failed a special minimum shock test was made by plotting the actual shock strength of the rolls consecutively as to roll number. The shock-strength pattern seems to indicate a variation in some extrusion parameter, inasmuch as the consecutive roll numbers indicate extrusion in order from the same extruder continuously and all on the same day in this case.

When film fails to pass the minimum shock test, a step-by-step test will tend to narrow down the limits. For example, if it fails at 3 ft. a second sample can be tested at 1 ft. and if it passes that, then at 2 ft., etc. It should be pointed out, however, that in actually testing for passing or failing on an established minimum drop requirement, the sample should always be dropped the full minimum drop distance. There is evidence indicating that a bag that is dropped in step-by-step increments up to the required minimum drop distance will stand a better chance of passing the minimum required drop distance than will the bag if it is dropped the full required minimum drop distance in the first drop.

We explain this phenomenon on the basis that only slight degrees of stretching occur in the first small-increment drops and this distributes the shock stress over a greater area when the minimum required drop distance is attained.

A sample of the type of statistical results obtained by the laboratory of a large extruder on some film from the same extrusion order is illustrated below. A test load of 4 lbs. was used and the drop distance was measured in feet.

Number of samples — 25
Distribution:
Greater than 2 ft. — 1
" " 3 ft. — 7
" " 4 ft. — 13
" " 5 ft. — 3
" " 6 ft. — 1
Average — 3.84 ft.
Energy in ft. lbs. average 15
68% within 13 to 18 ft. lbs.
2.5% below 10 ft. lbs.
100% within 7 to 24 ft. lbs.
Total range 4 ft.
Average range 1.6 ft.

Application to other films

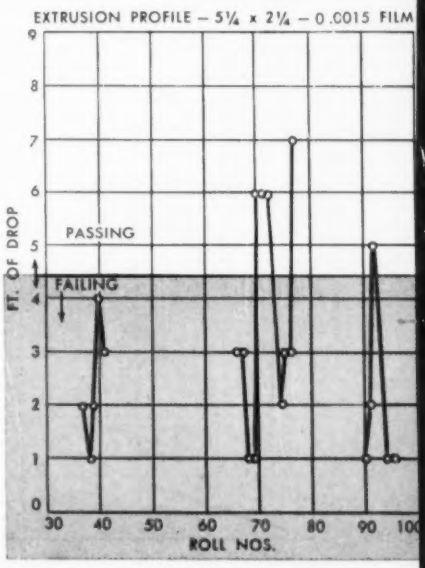
We have primarily had experience in using the shock test on two basic types of film, but there is no reason why its use can not be extended to many more. Below are listed some test results on some sample bags of five different films and based on 4.4-lb. loads dropped in step-by-step increments of 1 ft. Five bags were tested for each film.

1. Saran 517, gauge 0.0015, electronic back sealed 4 by 2 by 12 bags: all five bags good to 6 ft. and more, or 26.4 ft. lbs.

2. Polyethylene sheeting, flat die extrusion, 0.0015, 4 by 2 by 12 back sealed: two failed at 5 ft. on front face; three good to more than 6 ft.

(*This article continued on page 188*)

6. EXTRUSION PROFILE run by this method on one shipment of polyethylene film shows 16 out of 21 rolls failing a special required minimum shock test. This graph was made by plotting actual shock strength of rolls consecutively by roll number.



A package cushioning nomogram

Development of a single alignment chart offers new simplicity in the calculation of cushioning requirements.

By JAMES S. HARDIGG*

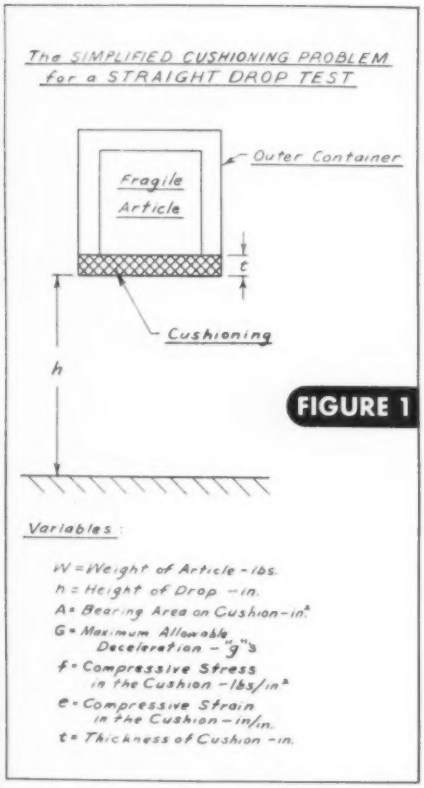

The SIMPLIFIED CUSHIONING PROBLEM
for a STRAIGHT DROP TEST
Outer Container
Fragile Article
t
Cushioning
h
Variables:
W = Weight of Article - lbs.
h = Height of Drop - in.
A = Bearing Area on Cushion - in.²
G = Maximum Allowable Deceleration - "g"s
f = Compressive Stress in the Cushion - lbs/in.²
e = Compressive Strain in the Cushion - in/in.
t = Thickness of Cushion - in.

FIGURE 1

Package cushioning calculations have been difficult, and in a sense impossible, for the majority of packaging people because of the numerous stress-strain curves and the mathematical skill that have been required to solve the simplest cushioning problems. The study[1] that is outlined here overcomes these obstacles that have hindered practical cushioning calculations by the development of a single alignment chart for package cushioning. The development of this chart, the use of which requires no mathematical skill or stress-strain curves, promises to make cushioning calculations feasible for the majority of packaging people.

The computation of the amount of cushioning material required to protect a fragile article for shipment is complex if all the relevant factors are taken into account. In fact, there is as yet no mathematical treatment of cushioning which considers all the factors. Even if such a mathematical means existed, it could rarely be used now, because usually there is not enough known about the shock and vibration that will be encountered, the strength of the article itself or the behavior of the cushioning material. The need at present is for a solution of the cushioning problem simplified as far as possible, so as to require only such information as is presently available.

A considerable simplification has been achieved by considering that the shocks that have to be met can be represented by those which occur when the package is dropped from a height. This procedure is justified by experience with the proof-testing of packaged articles for safe transit, which has shown that there is generally a certain height of drop which may be used to proof-test packaged articles for a given transportation and handling system. This means that the relatively simple shock pattern that is produced by dropping a packaged article is generally adequate to indicate its performance under the more complex shocks of transportation and handling. The simplified shock pattern of the drop test is the basis of the ex-

* Design Engineer, Container Laboratories, Inc., Washington, D.C.

[1] Performed by Container Laboratories, Inc., for the Bureau of Ordnance, Department of the Navy, under Contract No. NOrd 13882.

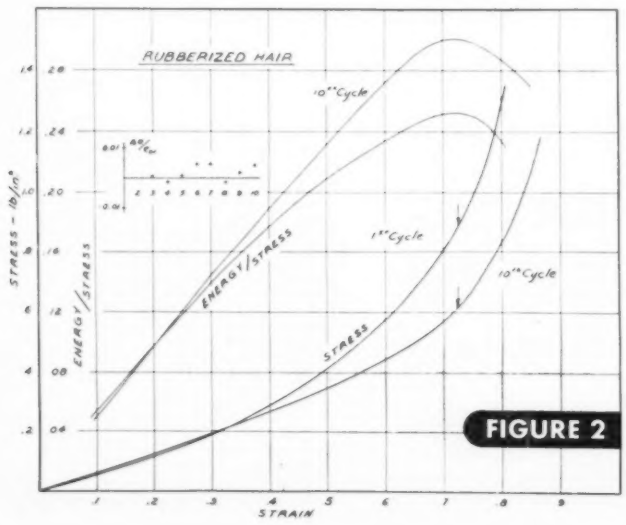


FIGURE 2

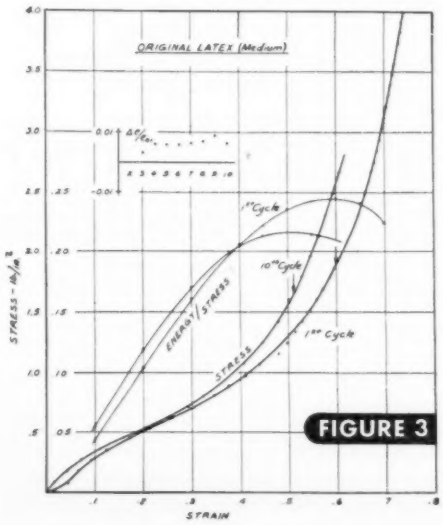


FIGURE 3

isting theoretical studies of cushioning. In fact, in order to achieve further simplification of the shock pattern, the drop test has been limited to a drop squarely onto the face of the package. There are excellent treatments of this case, notably those of Gretz(1)[2], Janssen(2), Kellicut(3), Mindlin(4), Mustin(5), Orensteen(6) and Underhill(7).

But there are obstacles to the widespread use of these studies: In the first place, they require the person who is making the calculations to have a stress-strain curve for each cushioning material that is under consideration. Secondly, not everyone is trained to understand the concepts and the mathematics involved.

To overcome these difficulties and to make cushioning calculations feasible for the majority of people who are faced with a cushioning problem, the following concept was developed in consultation with Dr. Mindlin: Cushioning calculations would be reduced to the use of a single chart applicable to many cushioning materials. In using the chart, only the simplest arithmetic would be required. To make this possible, the compressive performance of each cushioning material, which is usually represented by a stress-strain curve, would be expressed by two or three numbers. These compression performance numbers would be determined for each of many cushioning materials and gathered into a table. Then to calculate the thickness required to cushion an article with a particular material, one would enter on the chart the compressive performance numbers for this material. The chart and the table of compressive performance numbers would be all that would be required to make cushioning calculations for a large number of materials. Further, the chart could be in alignment form so that no arithmetic would be necessary in its use. The chart would not have to be changed as new materials were developed. Of course, a new material's compressive performance numbers would have to be determined. The manufacturer of the material could have this done and could supply these numbers along with the other data such as cost, density, etc.

[2] Numbers in parentheses identify "References" appended.

The problem in general

The package cushioning problem, broadly stated, is to determine the most economical means of using the available cushioning materials adequately to protect a fragile article against the shocks and vibration of shipment. This problem has two aspects and may be stated as two separate problems:

1. Given an article and a particular cushioning material, how much of this material is required to protect the article?

2. Which cushioning material will most economically protect the article?

The problem of cushioning with a particular material. As mentioned above, the problem of computing the amount of cushioning material required in a package is complex if all the relevant factors are taken into account. However, at the present time the knowledge of the magnitudes of some of these factors is so limited that they cannot be directly considered. This study takes into account only those factors which are significant and whose magnitudes are presently known or which are indispensable for a reasonably accurate result. Consequently, this study considers the amount of cushioning required under certain specified conditions rather than under all conceivable conditions.

Conditions defining the cushioning problem for this study. The following conditions of package configuration, shock, article strength and cushioning-material properties have been specified for this study:

1. The fragile article is encased by cushioning which yields in compres-

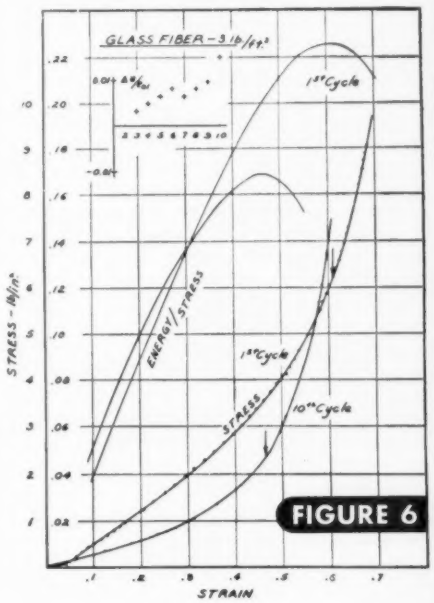


FIGURE 6

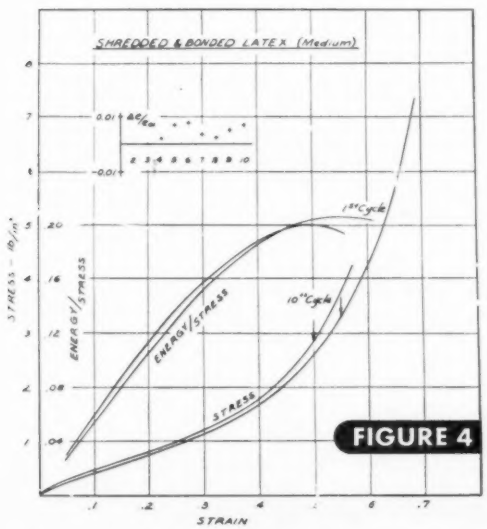


FIGURE 4

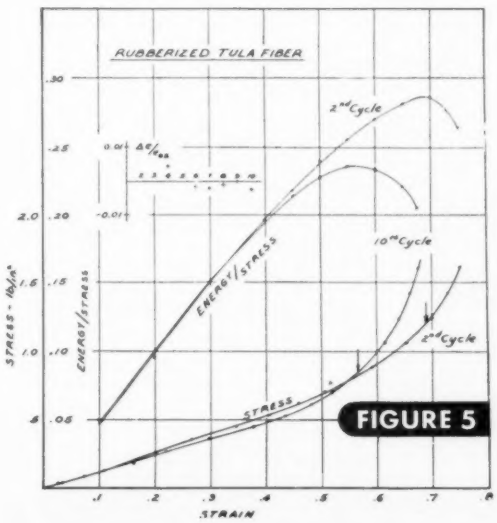
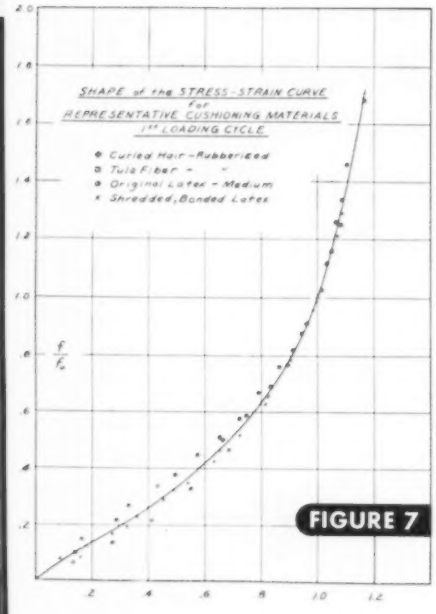
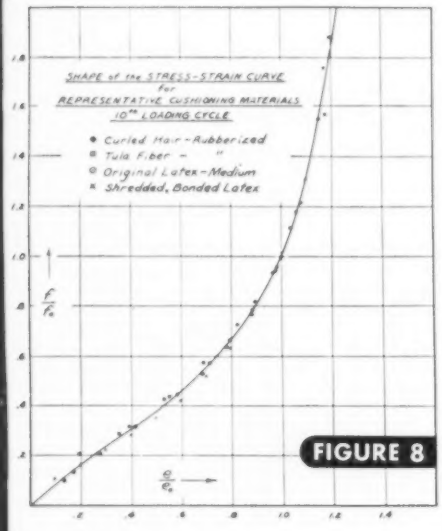


FIGURE 5





sion to reduce anticipated shocks. (Compression cushioning is the subject of this study although other means of shock absorption are also used in packaging.)

2. The article either has flat surfaces which bear on the cushioning, or is in a container which presents flat surfaces to the cushioning.

3. The article and the cushioning are enclosed in an outer container whose faces are parallel to those of the article, or a container immediately surrounding it.

4. The cushioning next to any one particular face is uniform in thickness. The thickness of cushioning may differ from face to face, however.

5. The shock is to be that which results from a vertical drop onto a horizontal, unyielding surface. (Experience in the proof-testing of packages indicates that the drop test is roughly equivalent to the shocks of handling and transportation.)

6. The drop is to be without rotation and the package is to land flat on one of its faces. (It is much simpler to treat a flat drop than a corner or an edge drop. Also it is reasonable to expect that a flat drop produces a more severe shock for a given height.)

7. The maximum deceleration that the packaged article, or its most fragile component, will withstand under shock is independent of the rate at which the shock comes upon it. This is to say that resonant excitations of components of the article are not considered.

8. The compressive performance of the cushioning material is the same under dynamic loads as it is under static loads. (Although it is not in accord with the actual situation, this condition has been set to allow the use of static compressive data, which is available, in place of dynamic data, which has rarely been available. Actually, the cushioning materials have inertia and damping and possibly other properties which respond to rapid loads. However, in most cases these properties result in there being a lower peak force exerted on the fragile article than predicted from the static compressive properties.)

9. The compressive stress-strain relationship, as determined by static tests, is independent of the geometrical proportions of the cushion. That is, the breadth-to-thickness ratio and the ratio of the loaded to the total area of the cushion do not affect its compressive properties. (It is reasonable to expect this condition to hold true at high values of the breadth-to-thickness ratio and the loaded-to-total-area ratio. Some error may occur at low values of these ratios. At present, there is but little data from which to draw a more accurate condition.)

10. The deflection of the cushion in decelerating the fragile article does not significantly increase the height of drop. (This condition simplifies the final form of the expression for cushion thickness. When the maximum allowable deceleration exceeds 30g, the above approximation causes no appreciable error.)

11. The deflection of the cushion due to the static weight of the article when the package is at rest may be neglected. (This condition simplifies the final form of the expression for cushion thickness. When the maximum allowable deceleration exceeds 20g, there is no significant error due to the above approximation.)

12. The inertia of the cushioning that lies above the article does not increase the shock that reaches the article.

13. The cushioning pads whose planes are parallel to the direction of drop do not assist in decelerating the article. (Actually if there is friction between the side pads and the article, there will be some assistance.)

The simplified problem

The above conditions leave the following simplified problem, which is illustrated in Fig. 1:

The article is encased by cushioning material and an outer container. The resulting package is dropped squarely on a horizontal unyielding surface. Upon impact, the outer container is assumed to stop abruptly, whereas the article decelerates more gradually through the compressive yielding of the cushion that lies beneath it.

Given: The weight of the article, its maximum allowable deceleration in the direction of drop being considered, its bearing area on the cushioning, the stress-strain relationship of the cushioning material and the height of drop.

To find: The minimum thickness of this material that is necessary to cushion the article.

Expressed more concisely in symbols, the problem is:

Definitions: t = thickness of cushioning—in.
W = weight of the article—lb.
h = height of drop—in.
A = bearing area of the article on the cushioning—in.^{2}
G = maximum allowable deceleration in "g's"
f = stress to which the cushioning material is compressed—lb./in.^{2}
e = strain to which the cushioning material is compressed—in./in.

Given: W, h, A, G and f = a function of (e)

To find: t

By the techniques of dimensional analysis it is found that:

TABLE I—CLASSIFICATION OF CUSHIONING MATERIALS BY STRUCTURE AND BASIC MATERIAL

Matted fibre structures — Without bonding; Semi-rigid bonding; Elastomeric bonding

Cellulosic		*Animal origin*	*Inorganic*
Excelsior	Bagasse	Curled hair	Glass
Paper	Cotton	Felt	Metal
Paper pulp	Jute	Wool	Asbestos
Papier maché	Flax		
Wood felt	Straw		
Tula			

Cellular structures

Moderately resilient basic materials
- Cork
- Wood

Highly resilient basic materials — Natural and synthetic elastomers
- As blown
- Shredded and rebonded

Interconnecting cells / Closed cells

Corrugated, creped and ridged structures

Corrugated fibreboard	*Creped cellulose wadding*	*Molded corrugated pulp*
Single faced		
Double faced		
Double wall		

Granular materials
- Shredded elastomers
- Ground cork
- Popcorn
- Sawdust
- Vermiculite

Solids
- Elastomers

Devices

Moderately resilient structural members of the container	Moderately resilient blocking structures	Shock isolators

$$t \times \frac{G \times e_o}{h} = \text{a function of } \frac{G \times W}{A \times f_o} \qquad \text{- - - - - (1)}$$

where e_o and f_o are measures of the magnitudes of the strains and the stresses in the particular cushioning material under consideration.

The function that is indicated in equation (1) depends on the relationship between the compressive stress and the compressive strain when they are expressed in dimensionless form, that is as f/f_o and e/e_o, respectively.

The critical question is: Does each material have a unique dimensionless stress-strain relationship, or are the relationships for various materials sufficiently alike to allow a single formulation of equation (1) which will apply to many materials?

It is evident that the stress-strain relationship of a cushion depends on that of the basic material in the cushion and on the structure by which the basic material is arranged. Regarding their stress-strain properties, the basic materials may be roughly divided into two types, according to their maximum allowable percentage of elongation under stress. Most of the basic materials have relatively low maximum percentage elongations as, for example, cellulose, animal hair and glass. On the other hand, the rubbers and some of the synthetic plastics have relatively large maximum percentage elongations. The materials with small elongations usually occur in the form of fibres which are bent and matted into a cushioning material, the reason being that this structure permits the large deformations required for cushioning without rupturing the materials. On the other hand, rubber and the other elastomers are more often used in cellular structures which utilize their greater capacity for deformation.

There are additional structural factors: In the case of fibrous structures, the fibres may or may not be bonded to each other and the bonding material may be relatively rigid or it may be deformable. Also the fibres may be smooth or they may tend to interlock, as in felt. In the case of cellular structures, the cells may be interconnecting or they may be closed.

It is evident from this analysis that there are several types of cushioning material, as presented in Table I. It is reasonable to believe that cushioning materials of the same type have approximately the same kind of stress-strain relationship. On this basis, it was decided to test materials representative of each general type. However, granular materials, solids and cushioning devices were not included in the selection. The following five materials were selected:

- Rubberized tula fibre
- Rubberized hair
- Glass fibre
- Natural latex rubber foam
- Shredded and re-bonded latex foam

This list is not as complete as would be desired, but it was beyond the scope of this study to test more materials.

The stress-strain relationships of these materials are plotted in Figs. 2 through 6.

The question is: Do the curves shown in Figs. 2 through 6 have the same shape when plotted in dimensionless form? First it is necessary to find some kind of distinguishable point

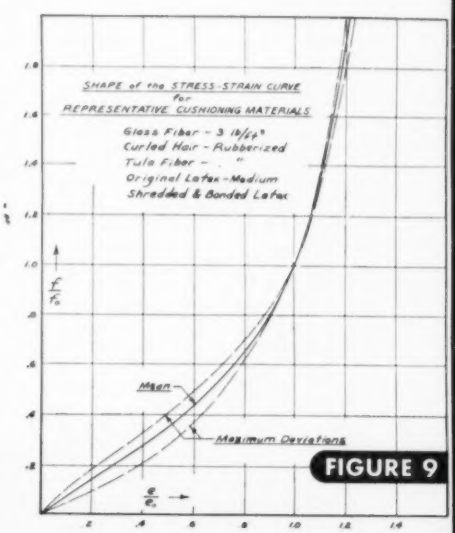


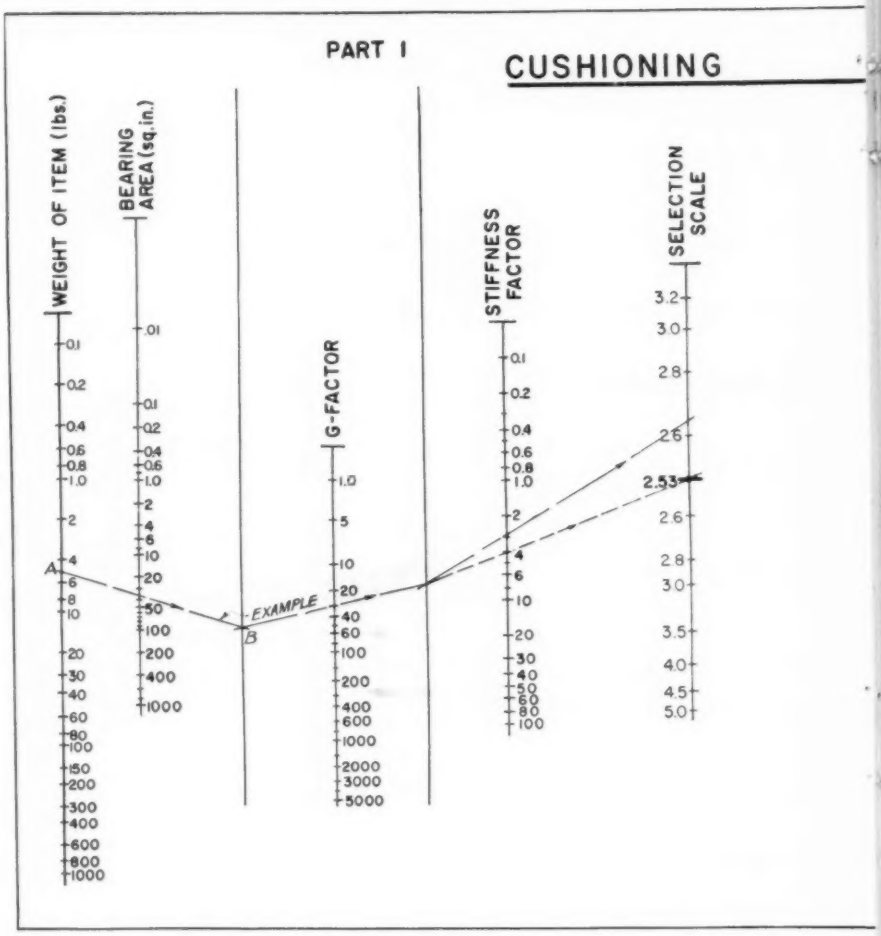
FIGURE 9

which occurs on each of these curves. It was reasoned that the most useful point is the "thickness optimum" point described by Janssen.(2) This is the point of stress and strain which the material should be designed to attain in a drop test if it is desired to minimize the thickness of material. To find this point, the ratio of the compression energy per unit volume to the stress is computed from the stress-strain curve and plotted as a function of strain. This curve has a peak at some value of strain. (See Figs. 2 through 6). This strain and the corresponding stress are the optimum design values for minimizing the thickness of material. For this reason, they are an advantageous choice for e_o and f_o.

Using this e_o and f_o, the stress-strain curves shown as Figs. 2 through 6 have been plotted in dimensionless form. Considering any one particular curve, this means that each stress on the curve has been divided by the value of f_o which pertains to that curve and each strain has been divided by the value of e_o for that curve. The ratios thus obtained have been plotted as f/f_o versus e/e_o. Fig. 7 shows the results for four materials on their first loading cycle. They all have approximately the same dimensionless stress-strain curve. Fig. 8 shows the dimensionless stress-strain curve for the tenth loading. Here again, we have practically a single curve. Fig. 9 is an average of these two curves and the dotted lines show the maximum deviations of these materials. It is of much interest to note that when this mean curve is used for cushioning calculations the resulting maximum error in cushion thickness is at most not more than 4% when designing for minimum thickness.

So it appears, at least for these materials, that a single formulation of equation (1) based on the curve shown as Fig. 9 can be used with little error. The function in equation (1) has been graphically computed from the curve in Fig. 9 and the resulting formulation of equation (1) is shown by Fig. 10, which shows the required thickness of cushion in terms of the other quantities. This single curve is valid for any cushioning material whose dimensionless stress-strain curve may be approximated by the curve in Fig. 9. This single curve, then, may be used for many materials in place of a separate curve for each one.

The use of this curve does require, however, the performance of some algebra and a familiarity with graphs. For those who prefer not to use these skills, the curve shown in Fig. 10 has been transformed into a Cushioning Nomogram, which is printed herewith.

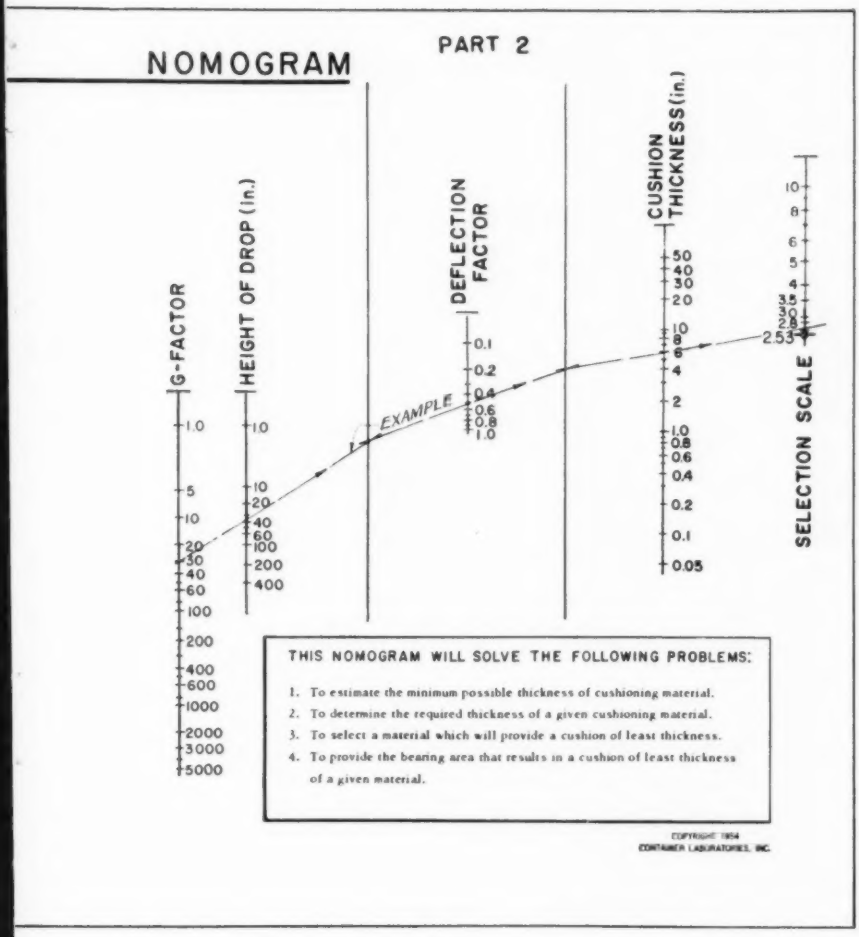


Use of Nomogram

The use of the Cushioning Nomogram or alignment chart is illustrated by the following example:

Suppose an instrument weighing 5 lbs. which is capable of withstanding a 30g deceleration and which bears on a cushion area 6 by 6 in. is dropped from a height of 36 in. We first enter the chart in Part 1 from the left-hand side with the weight and the bearing area. A line is drawn from the 5-lb. mark on the weight scale to the 36-sq.-in. mark on the area scale. This line is extended to intersect the reference scale adjacent on the right. A second straight line is drawn from this intersection through the 30g mark on the G scale and continued to intersect the next reference scale on the right. To determine the f_o (stiffness factor) which will result in the least thickness of cushioning, draw a line connecting this intersection with the point 2.53 on the scale to the right of the f_o scale (this is indicated by the line of short dashes). The intersection of this line with the f_o scale shows that an f_o of 4.0 yields the minimum thickness. Of the material shown in Figs. 2 through 6, the one whose stiffness most closely corresponds is that of Fig. 4. Entering the f_o scale with the f_o for this material, which is 3.0, we obtain a number from the Selection Chart somewhat greater than 2.53 which we transfer to the scale at the far right of Part 2.

Now, starting on the left-hand side of Part 2, we enter with 30g and with the 36-in. drop and draw a line which intersects the reference scale to the right of the "h" (height) scale. A line is drawn from this intersection through the point on the e_o (deflection factor) scale that applies to this material, namely $e_o = 0.51$, and is extended to intersect the next reference scale. Finally, a line is drawn from this intersection through the "t" (thickness)


NOMOGRAM
PART 2
G-FACTOR
HEIGHT OF DROP (in.)
DEFLECTION FACTOR
CUSHION THICKNESS (in.)
SELECTION SCALE
EXAMPLE
2.53
THIS NOMOGRAM WILL SOLVE THE FOLLOWING PROBLEMS:
1. To estimate the minimum possible thickness of cushioning material.
2. To determine the required thickness of a given cushioning material.
3. To select a material which will provide a cushion of least thickness.
4. To provide the bearing area that results in a cushion of least thickness of a given material.
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scale to the scale beyond at the point on it which was obtained by working Part 1 of the chart. The point where this line crosses the "t" scale shows that 6 in. of this material is required to protect the instrument.

The Cushioning Nomogram can be used to solve the following problems:

1. To estimate the minimum possible thickness of cushioning material.
2. To determine the required thickness of a given cushioning material.
3. To select a material which will provide a cushion of least thickness.
4. To provide the bearing area that results in a cushion of least thickness of a given material.

Discussion

It is expected that when further tests of cushioning materials are made, the mean dimensionless stress-strain curve will shift somewhat and that the deviation of some materials will result in thickness errors of greater than 4% when designing at the stress corresponding to the minimum thickness. But since most cushioning materials are supplied in increments of thickness several times larger than 4% and since their stiffness varies considerably between samples, greater accuracy of calculation may not be warranted at this time. It may be obtained, however, by adding a third compressive constant of the material which measures the "fullness" of the dimensionless stress-strain curve. This third constant could be the "efficiency" up to the stress f_o and the strain e_o. This efficiency is the ratio of the energy absorbed by the material to the energy that would be absorbed if the stress were equal to f_o over the whole compression from zero strain to e_o. Referring to Fig. 9, the efficiency would be the area beneath the dimensionless stress-strain curve up to a dimensionless strain of 1.0. If this third compressive constant were used, there would have to be additional scales in the alignment chart of the Cushioning Nomogram.

It is of much interest to note in Fig. 10 that when $\frac{G \times W}{A \times f_o}$ is in the neighborhood of 1.0, $t \times \frac{G \times e_o}{h}$ is nearly constant. This suggests that there is a range of f_o over which a constant thickness may be used with little difference in the cushioning effect.

To make the Cushioning Nomogram useful for a large number of materials, it will be necessary for the stress-strain relationships to be determined in a uniform and rational manner. The values of f_o and e_o can then be found and compiled in a table. This tabulation should also include the density of the materials and the maximum stress to which they can be loaded for a number of cycles.

Selection for economy

The cost of providing cushioning has several aspects:

(1) The cost of the cushioning material itself.

(2) The shipping and storage costs due to the volume added by the cushioning.

(3) The shipping costs due to the weight added by the cushioning.

(4) The fabrication costs of the package due to the cushioning.

(5) The change in container costs due to the cushioning.

The fourth and fifth aspects of cost listed above are beyond the scope of this study.

(1) The first aspect, the cost of the cushioning material itself, is minimized by choosing the material which absorbs the most energy per unit cost. To find the thickness of this material that is required, we consider that the maximum energy will be absorbed at a certain maximum stress which can be expressed as f_m/f_o which equals $\frac{G \times W}{A \times f_o}$. From Fig. 10 of the Cushioning Nomogram, the corresponding value of $t \times \frac{G \times e_o}{h}$ can be found from which t is then determined.

It is interesting to note that the amount, that is, the volume of a given cushioning material that is required to absorb the drop energy of a fragile article, is practically independent of the G factor of the article. So that even if the G factor is not known, the required volume of cushioning can be obtained if the material's energy-absorption capacity per unit volume is known. Of course to control closely the magnitude of the shock, the bearing area and the thickness must be determined. But in cases

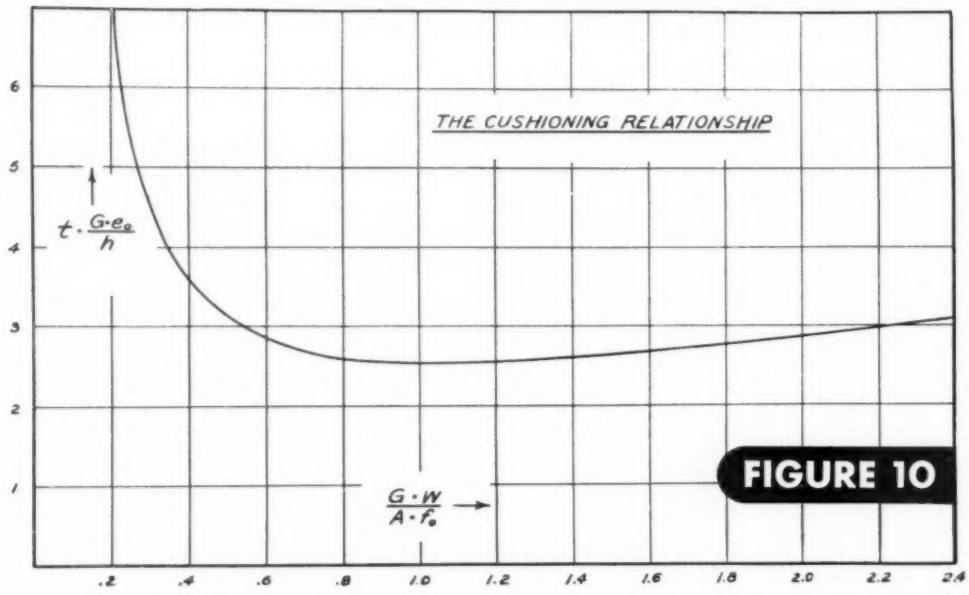

FIGURE 10

where the allowable G factor is not known, but is probably fairly high, it is useful to be able at least to estimate the minimum amount of a given material that will prevent very large shocks.

(2) The shipping and storage costs of the volume added by the cushioning are minimized by using the material that will accomplish the cushioning with a minimum of thickness. As discussed in the derivation of the cushioning equation, a material's maximum load under impact should produce the stress f_o in order to minimize the thickness required. In order to attain this stress, the area of the cushion will generally have to be different from the area of the article. To compare different materials, all of which are loaded to f_o, it is noted in Fig. 10 that there is a minimum value of $t \times \frac{G \times e_o}{h}$. So for given G and h, the material which has the largest e_o will result in the least thickness t.

(3) The shipping costs due to the weight added by the cushioning are minimized by using the material which absorbs the most energy per unit of weight. As is the case in minimizing the cost of the material itself, the bearing area has to be adjusted so that the material will be loaded to its maximum allowable stress.

Combining these three aspects we have the total cost of cushioning, as influenced by these factors, as follows:

Definitions:

C_{mv} = Cost of material per unit volume

C_{sv} = Cost of shipping and storage per unit volume

C_{sw} = Cost of shipping per unit weight

V_c = Volume of cushioning

ΔV_p = Increased volume of package due to the cushioning

γ = Weight of cushioning per unit volume

Then,

$$\text{Total cost} = C_{mv} \times V_c + C_{sv} \times \Delta V_p + C_{sw} \times V_c \times \gamma$$

or

$$\text{Total cost} = V_c (C_{mv} + \gamma \times C_{sw} + C_{sv} \times \Delta V_p$$

If the cushioning entirely fills the space between the article and the outer container, then

$$\Delta V_p = V_c \text{ and}$$

$$\text{Total cost} = V_c (C_{mv} + C_{sv} + \gamma \times C_{sw}$$

Each of the above aspects of cost can be evaluated by means of Fig. 10 on the Cushioning Nomogram.

Conclusions

1. The amount of cushioning material required to enable a fragile article to withstand a specified drop test can be found from a single relationship which applies to many cushioning materials. This relationship, shown graphically by the curve in Fig. 10, relates cushion thickness to the weight of the article, its bearing area on the cushioning, its fragility, the height of drop and a stress and a strain characteristic of the cushioning material. The characteristic stress and strain for each cushioning material are obtained by a prescribed process.

2. This relationship will predict the required thickness of any one of the four representative cushioning materials listed in Fig. 8, with an error not greater than 4% when designing for minimum thickness. By the addition of a third compressive constant, this error could be further reduced and the cushioning relationship could be applied to all the common cushioning materials with negligible error.

3. The cushioning relationship can be presented as an alignment chart in order to avoid all mathematics in finding the required amount of cushioning. One possible arrangement of the chart is shown as the Cushioning Nomogram.

4. The cushioning relationship shows the minimum possible thickness of cushioning and the stiffness of material that must be used to attain this minimum of thickness. If the bearing area on the cushioning is variable, the cushioning relationship shows the area which must be used to enable a given material to cushion with a minimum of thickness.

5. The most economical cushioning material for a given application can be chosen from the standpoint of direct material cost, cubage and weight. The necessary calculations of cushion thickness and the selection of cushion stiffness may be made using Fig. 10 or the Cushioning Nomogram.

Acknowledgment

The author wishes to thank Messrs. H. F. McClellan, R. E. Seely and R. H. Long at the Naval Ordnance Laboratory, White Oaks, Md., and
(*This article continued on page 182*)

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Leakproof polyethylene seal

QUESTION: We are faced with the problem of packaging a liquid product in a polyethylene container. The container consists of a polyethylene bottle with a special nozzle and spray tube. As a result of tests, we have decided that it is necessary to seal the nozzle into the neck of the bottle to prevent leakage at this point. We are experiencing difficulties in making a rapid and positive seal and would like your help and suggestions.

ANSWER: The heat sealing of two heavy polyethylene sections to effect a durable and liquid-tight joint is a difficult procedure. The problem is aggravated by the fact that the polyethylene bottle is probably made by a blowing technique and the nozzle is probably made by injection molding. These two different processes may use somewhat different polyethylene resins and can produce stressed areas which distort under heating.

There is also the possibility that the surface of the injection-molded part may be contaminated with mold release compounds which can resist the joining of the fused resin surface. You should be sure that both parts to be sealed have no such compounds on their surfaces.

It will be extremely difficult to attempt to put the two parts together and then effect a weld by applying heat from the outside of the bottle finish. The temperature required to effect a strong seal is critical and so much heat would have to be applied that heavy distortion could result by the use of such a technique.

It is suggested that you try fusing the surfaces to be joined in the two parts by direct heat application by rotating both parts. This process will melt the polyethylene surfaces and the two parts can then be quickly joined to effect a strong and effective seal. This technique has the advantage of being very rapid, although it may be necessary to develop your own machine for this special application.

Polyethylene presents many problems in sealing by the use of adhesives and solvents and, therefore, it is doubtful if this approach would give you reliable results without the danger of contaminating the product by solvents.

It might be possible for you to redesign the nozzle and use a bottle with a reamed neck, inserting a plug with pressure and holding it in place with a screwed-on band. Polyethylene will distort under pressure and it might be possible to effect a liquid-tight seal by this method.

Bottom failure of bags

QUESTION: We have been testing many different types of all-paper bags and using several types of adhesives. The product is a dense, free-flowing, coarse powder. In some cases the bottoms fail, but if the bottoms do not fail then the bag fails by splitting just above the bottom. We used the same paper for all the tests. Why should the side split if the bottom of the bag is strong enough to stand the drop? Your advice on this matter will be very much appreciated.

ANSWER: A dense, free-flowing, coarse powder acts like a liquid and not like a solid. This means that a sudden impact can cause forces to be applied in all directions. If the bag bottom fails because of weak adhesive or a poor type of construction, the forces are released when the products spill out. If the bottom holds, however, then the forces are exerted on the side of the bag and the greatest force is nearest the bottom. The result is a split gusset or burst bag from the hydraulic action.

The solution to this is for you to use either a stronger paper or a duplex construction if you must make a bag that will pass a drop from a specified height.

Heat-seal failure

QUESTION: We printed a batch of sheets on a small multicolor litho press for a sample lot. The samples were paper-to-foil laminations with a heat-sealing coating on the foil. Several kinds of paper were used. We later made heat-sealed envelopes from these printed sheets. The heat seals were very poor and variable, but those on the unprinted stock were good. Why would printing the paper side adversely affect the heat sealing of the envelopes?

ANSWER: The heat-sealing coating normally applied on foil to make it heat sealable is very thin. This coating is an excellent sealer and operates on many different kinds of heat-sealing machines.

However, because it is very thin, it will not seal through powders or other substances that might be on its surface as a result of printing or of filling dusty products. If you used an anti-offset spray of any type, this could get on the coating and interfere with the fusion of the coating. It is also possible that the coating could be affected by volatile fractions of the inks or migration of oily portions. It is suggested that you try a heated zone to set the inks in place of an anti-offset spray. There is also the possibility that some of the rollers were not thoroughly cleaned for this sample run.

You should also consider using flexographic or rotogravure printing, since these types of printing can use inks which set by evaporation of solvents. Such inks do not need anti-offset sprays and can be formulated to be free of waxes or oils which could offset onto the heat-sealing coating.

Laboratory sealed...

with a Du Pont CEL-O-SEAL Band

REG. U.S. PAT. OFF.

"Building and maintaining consumer confidence in quality pharmaceuticals is a never-ending task. From raw materials to finished products, U. S. Vitamin Corporation strives ceaselessly to maintain its high standards of quality, purity, uniformity and stability. When a consumer buys and opens our Vi-Syneral Vitamin Drops, he is sure of protected quality—a tamperproof original package, *laboratory-sealed* with a Du Pont 'CEL-O-SEAL' band. Over 40,000,000 bottles of Vi-Syneral Vitamin Drops, which is the original (since 1943) 'oil-in-water' vitamin solution, have combined 'CEL-O-SEAL' product protection with neat package appearance."

says **Mr. H. B. Burns,**
President
U. S. Vitamin Corporation

Impression-making Du Pont "Cel-O-Seal" bands will work for your package, too! They hold closures tight, guard against tampering and spillage, inspire consumer confidence. And "Cel-O-Seal" bands are available in a wide range of colors, can be printed with an eye-catching sales message or slogan.

DU PONT
CEL-O-SEAL BANDS

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DU PONT

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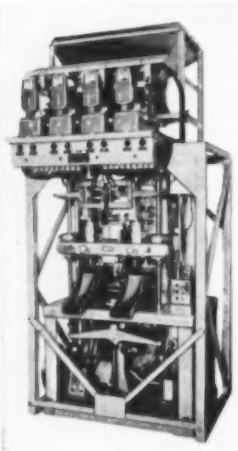
BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

FREE PACKAGING SERVICE: See for yourself what Du Pont "Cel-O-Seal" can do for *your* package. Send us a labeled dummy bottle. Our packaging experts will band it, return it for your inspection. No obligation, of course. Write: E. I. du Pont de Nemours & Co. (Inc.), "Cel-O-Seal" Section, 9529-A Nemours Building, Wilmington 98, Delaware.

"Cel-O-Seal" cellulose bands are also sold by Armstrong Cork Co., Lancaster, Pa.; and on the West Coast by I. F. Schnier Co., San Francisco, Calif.

Equipment and materials

A NEW FILLING MACHINE
especially designed for accurate automatic packaging of items not suitable for volumetric filling has been introduced by the Stokes & Smith Co., 4992 Summerdale Ave., Philadelphia 24.



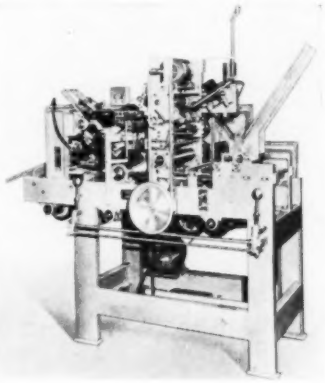
Feature of this improved Stokeswrap packaging machine is the addition of a battery of net-weight scales manufactured specifically for this unit by the Woodman Co., Inc., 120 Avondale Rd., Avondale Estates, Ga., which permit filling speeds up to 60 packages per minute. Accuracy of fill, the company reports, is assured by means of bulk and dribble feed. Intended to answer the problem of filling of many free-flowing and mixed materials, the new machine is said to be particularly suited for packaging such items as mixed nuts, odd-shaped candies, crackers and cookies. It forms, fills and heat seals packages from any approved heat-sealing film, paper or foil. Package sizes range from $1\frac{3}{16}$ in. wide by 1 in. long to $5\frac{1}{16}$ in. wide by $12\frac{1}{2}$ in. long. The net-weight scales used on this machine are built to fit any new or existing standard Model BS Stokeswrap.

THE DUTCH "RENKA" BAG-MAKING MACHINE
which makes tear-resistant film bags with reinforced tops (see MODERN PACKAGING, Aug., 1953, p. 138) is now available in the United States from Geveke & Co., 25 Broadway, New York, recently appointed by F. van der Muelen & Zn., N.V., Amsterdam, Holland, maker of the machine, as exclusive American distributor for this equipment. Fold-over-top bags made automatically (with or without string-reinforced tops) on the Renka machine are said to offer greater resistance to tearing during the packaging process because the film grain runs across the bag instead of lengthwise, as with conventional film bags. Production ranges from 10,000 to 20,000 bags an hour, depending upon bag size and film thickness. With small bags, even this large output can be doubled by using tandem rolls, it is reported. Twelve different bag designs can be made on the Renka machine, ranging in any size from 2 to $22\frac{1}{2}$ in. in length and from $3\frac{1}{8}$ to 13 in. in width. Bags made on the Renka machine offer the packager greater packaging speed, since products can be inserted in the bags with less careful handling than with other film bags. Change-over of the machine from one bag size to another is quick and simple, according to the company, involving a single gear change which takes about 10 minutes to change the length and 20 minutes to change the width. The Renka machine is equipped with all the necessary gears for easy hook-up with the printing press. Printing on one or both sides of the bags is possible because of the method in which the bags are formed without center seams. An unusual exclusive feature of the patented Renka machine is a mechanical regulator for pre-printed rolls. Dimensions of the machine are: height 62 in. and width 54 in.

Dr. G. M. Huttrer, (left) sales manager of the import department, V. van der Muelen & Zn., and Anthony Heybroek, president, Geveke & Co., view the Renka bag machine.

VACUUM-SEAL ANODIZED ALUMINUM TUMBLERS
are now being marketed by the Reynolds Metals Co., 2500 S. Third St., Louisville, Ky. They are designed to give the food processor an eye-appealing container for his product, quickly identifiable in the supermarket. They are interchangeable with glass containers on machinery which applies vacuum-pack lids. The tumblers, in 10 permanently finished colors, are available in 5-oz. and 10-oz. sizes. Extensive tests, according to Reynolds, have shown that the new tumblers are compatible with all foods. They may either be labeled or capped with printed lids. Both sizes of containers may be reused as table tumblers—the 5-oz. size for juices and the larger size for iced summer drinks.

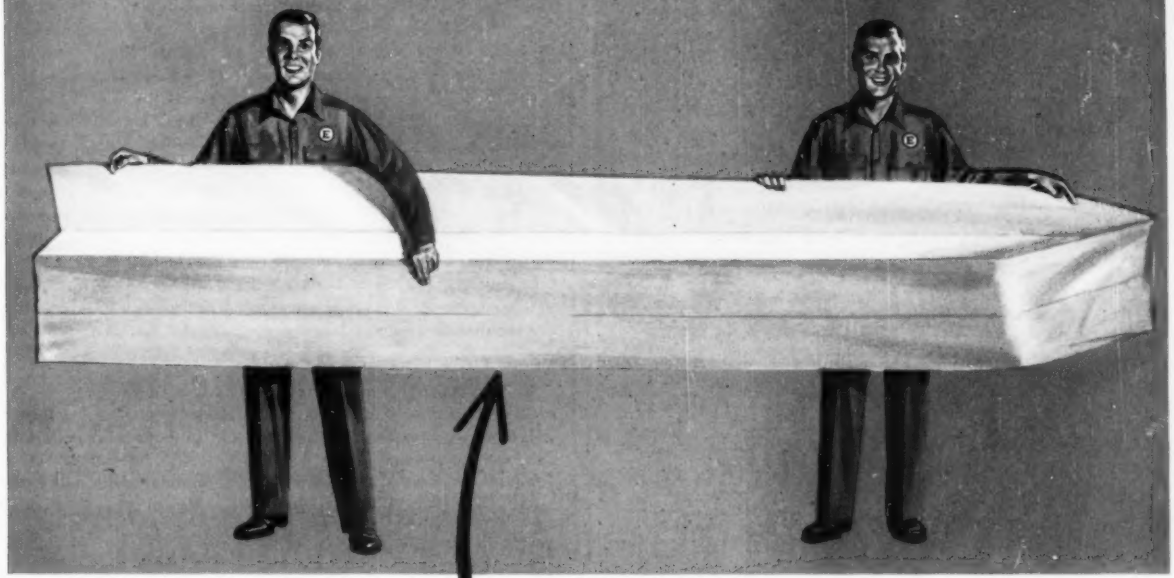
A NEW CRACKER WRAPPING MACHINE
designed to fill the need for an economical wrapping for soda crackers in a restaurant package is being offered by Stephen Bodolay, Inc., 77 Warehouse St., off Island Pond Rd., Springfield 8, Mass. It produces an airtight package, closely wrapped and easily opened by the consumer, according to the manufacturer. Elimination of the need for solvents or chemicals for sealing folds and applying easy-opening string is said to prevent any contaminating odors from reaching the crackers. The completed package, 4 in. long, 2 in. wide and ½ in. thick, has an eye-appealing view of two full cracker panels. The wrapping material, #300 MST cellophane (29 sq. in. per package) is roll fed in line with the crackers moving through the machine. This enables the use of staggered printing, thereby eliminating the need for registration mechanism. Production rate is reported at from 85 to 125 per minute. Feed is by automatic separation from the bottom of the stack. The machine is 6 ft. long, 3 ft. wide and 5 ft. high. Weight of the machine is 1,800 lbs.



A TRANSPARENT HIGH-GLOSS COATING
known as Pyroxcote 37-112, developed by Pyroxylin Products, Inc., 4851 S. St. Louis Ave., Chicago 32, is particularly recommended by the manufacturer for use on labels. The protective

Can your product be packed better in Super-Long paper bags?

Now you can get bags from 6 to 14 feet long
...made and printed in a single high-speed operation!



For shipping or storing long and bulky products, a paper bag offers these advantages:

Lowest cost package!
There's nothing more economical than a paper bag.

Saves packing time and labor!
Packs and seals quickly, easily.

Greater sales appeal!
Attractively printed in one or two colors.

For complete paper bag packaging service . . .

Equitable
PAPER BAG COMPANY INC

45-50 VAN DAM STREET, LONG ISLAND CITY 1, N. Y.
PAPER MILLS AND SOUTHERN BAG PLANT: ORANGE, TEXAS

Pasted-bottom bag or open end tube
Singlewall or duplex construction
Flat or gusseted style • All grades of paper
Circumference: up to 74"
Face widths: 5" to 20½"
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For additional information fill out and mail

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Please send further information on super-long bags.
Our product(s): .....

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Finest
Gravure printers desiring the finest packaging are specifying rotogravure cylinder etchings by "Acme Gravure".
We can meet the most exacting needs for cartons, labels, vinyls, gift wraps, box boards, etc.
Let us produce a superior cylinder engraving for your difficult copy . . . and, assist you in planning if desired.
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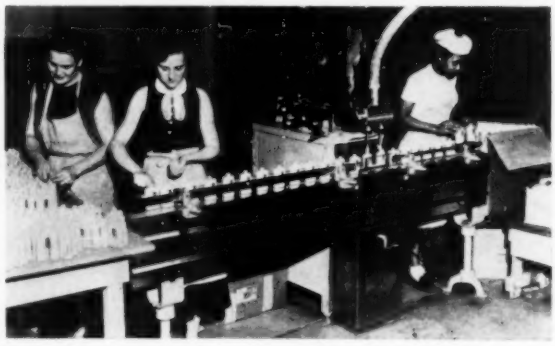
Equipment and materials

coating is easily applied over printing inks on gravure and flexographic presses, it is reported, using the regular ink stations. The fast drying rate of the composition is consistent with high-speed press operations and the resulting printed matter is reported to have unusual abrasion resistance and water-shedding properties.

THE REDESIGNED LIQUID FILLING MACHINE known as the Model A, Small Packager, according to Packer Machinery Corp., 30 Irving Pl., New York 3, manufacturer of the machine, includes the following new features: a drill-press-type handle that locks into position during the filling cycle; installation of the motor, pump, filter, etc., out of sight within the body of the machine; standard, interchangeable, stainless steel spout assemblies such as are found on the larger Packer fillers. These changes in the machine were based upon suggestions made by users in the field, according to the company. This redesigned Model A comes in a vacuum model (illustrated) equipped with three to six spouts and in a gravity-type model equipped with three spouts. Both have clear plastic tubing and are fully adjustable for handling containers from ounce to quart size.

AN INEXPENSIVE SQUEEZE-BOTTLE FILLER available in either manual or fully automatic models for filling polyethelene containers with any liquid or semi-solid materials has been announced by F. L. Burt Co., 571 Seventh St., San Francisco, makers of Simplex fillers. The manual model fills from



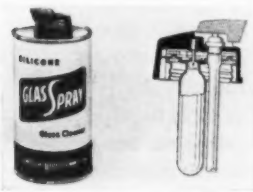
15 to 30 containers per minute and the fully automatic model with conveyor fills 40 to 60 per minute, according to the company. Both fillers come equipped with cone or U-shaped hoppers, or the intake can have a direct flow-line connection. The filler is reported to perform the ordinarily difficult job of filling squeeze bottles with ease and accuracy. The automatic filler handles 2-, 4- or 8-oz. glass jars as well as plastic bottles.

NEW WATER-RESISTANT, HIGH-STRENGTH TAPE for cartons, paper tube ends and bundles, announced by the Permacel Tape Corp., New Brunswick, N. J., is designed to withstand extremely rough handling in shipment under both dry and wet conditions. Paper backed and specially impregnated with a waterproof rubber resin composition, the new sealing tape, known as P 17, requires no activating solvent. The

rubber-type pressure-sensitive adhesive is said to assure quick stick and extra tight sealing. Under Federal Specification PPP-T-0076, a 2-in. width of P 17 may be used in place of a 3-in. width of solvent-activated, gummed kraft tape, the manufacturer reports. Its use is recommended for wrapping quality fabrics, delicate instruments and mechanisms, highly finished household merchandise, perishable or corrodible products. While designed primarily for carton sealing, the new tape can also be used for heavy-duty splicing of paperboard and for protecting polished or machined surfaces against shipping damage. P 17 is available in widths of ½ to 12 in. by ¼-in. multiples, standard 120-yd.-roll length, and is packaged in 36 1-in.-width rolls (or equivalent) per case.

A NEW TYPE OF PRESSURIZED CONTAINER

developed by Wolco Products, Inc., 36 Woodland St., Hartford 5, Conn., is reported to promise huge savings in production cost for manufacturers and savings of from 50 to 75% in the consumer cost of products. No special equipment is necessary and in most cases the manufacturer can continue to use his present type of containers and his regular filling line, the company reports, and practically any liquid can be packed. The process eliminates the use of propellents commonly used in pressurized containers. The new container consists of three units: the can or container, a separate plastic screw-on cap which houses the mechanism and a bullet-shaped metal pellet containing the propellent, carbon dioxide gas. The pellets—each being sufficient to empty one full container—are easily set inside the cap. Advantages claimed for the new container, in addition to low-cost production, are: minimum product dilution, ready availability of propellent, savings in freight by avoidance of restrictive shipping and parcel post regulations, simplification of stacking packages on retailer shelves.



AN INSTRUMENT FOR LAYING DOWN TEST FILMS

of plastic coatings or similar materials such as lacquers and adhesives for various types of comparative tests and analyses such those relating to color, opacity, weatherproofness, durability, impact resistance, hardness, adhesion, etc., has been introduced by the Gardner Laboratory, Inc., 4723 Elm St., Bethesda 14, Md. Critical dimensions are held to a tolerance of within 1/10,000 in., which is said to assure optimum accuracy of drawdowns over the entire width. Films of any desired wet film thickness may be drawn down by merely setting the applicator-gate opening, which only requires a second or two. This Gardner Ultra Applicator is available in several gate widths and several gap-clearance ranges. The instrument is comprised of an elongated hard aluminum body arranged in a stainless steel doctor blade. Two longitudinal stainless steel rail portions are fastened to the sides of the body. The lower planes of these rails are flat and taper at a gradient of 10 mils per 2-in. length, for the 0-10 mil range applicator. It is this gradient that establishes the film thickness that can be laid down by the device.

A NEW AMPOULE FILLING AND SEALING MACHINE

known as the Model FMA that will fill and seal up to 4,000 ampoules an hour with accuracy and economy has been announced by the PAC Div., American Roland Corp., 16 Hudson St., New York. Only one unskilled operator is required to attend the machine, merely to load empty ampoules and remove filled ones, according to the supplier. The unit feeds, fills, seals and discharges three ampoules at a time automatically. Filling

(Continued on page 140)

Low Packaging Costs
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equipment!
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HEAT SEALING — Smooth, continuous, non-intermittent operation and perfect sealing of all heat sealable materials with *heat, pressure* and *time* fully controlled . . . *automatically.*
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Now Available! Code-dating attachment for AMSCO Cellophane and Polyethylene Bag Sealing Machines.
There is an AMSCO Heat and Adhesive Sealing Machine for every requirement—foot, hand, bench and floor.
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Specialists in Diversified Packaging Equipment

Packaging is mechanized merchandising

Merchandising might be defined as the operation of making goods move at the retail level. Once it was almost entirely the responsibility of the storekeeper. When he had only bulk goods to work with, he had to depend on his own selling skill to interest customers in his wares.

Today, *creative packaging* is available to provide customers with an urge to buy. More thoroughly and efficiently than any merchant can do, however expert, it shows the shopper that here is the merchandise she wants, when she wants it, at prices she wants to pay.

WHAT THE CUSTOMER WANTS, In many cases, is not actually a product at all. She wants what the product *will do for her*. This is why a woman will spend several dollars for a new hat that may be no more than a wisp of straw and a feather.

In their unwrapped state, many of the items in the modern supermarket or drug store–like the "raw materials" of a bonnet–have little to capture the imagination. However, creative packaging can make shoppers feel a need of these items. Creative packaging can promise ease of use, the pleasure of surprising the family, savings in time and money, and offer other valid reasons for buying. Among other things, creative packaging may:

- Arouse eye- and appetite-appeal with color and design.
- Identify the product-family, trade-mark, grade, quantity and ingredients.
- Eliminate spot weighing or counting.
- Permit visual inspection (with transparent wrappings or windows).
- Help demonstrate attractive or unusual features.
- Open new markets by special design (as aerosol containers do for paints).
- Feature recipes or multiple uses.
- Make possible convenient departmentalization of outlets.
- Enhance the appearance of stock . . . keep it looking fresh and tempting.

No. 4 of a series

- Permit mass display on shelves, gondolas, counters, tables, etc.
- Capitalize on pre-selling accomplished by national advertising.

WHEN THE CUSTOMER WANTS IT. In present day marketing, the time-supply element has all but disappeared. Almost any product can now be made available in packaged form at any season of the year. The main reason why certain products are not stocked, or move slowly at times, is that shoppers have come to associate them with a particular time of year. With creative packaging, you can often overcome this merchandising handicap. For instance, you can:

- Arouse interest in packaged products by tying in with seasonal products like fruits and vegetables.
- Feature off-season uses. (Syrup on bread as well as pancakes; hot cereals for making cookies, etc.).
- Dress up products for holidays, special occasions, gift sales.
- Keep a product from becoming "old hat" by featuring new sizes, flavors, and methods of use or application.

AT PRICES SHE WANTS TO PAY. All value is relative. The customer will pay your asking price if your product meets her needs better than another product she might buy. You recognize this fact when you use creative packaging to:

- Break larger units into smaller ones for smaller families.
- Beam product directly at men, women, children, mothers, foreign language groups, etc.
- Offer savings by purchase of "mother" package containing several varieties.
- Provide ready-made assortments or mixes to save scattered shopping.
- Facilitate special deals, premiums or trial offers.

• • •

Men who do creative packaging for mechanized merchandising must know marketing methods and the working of the human mind . . . as well as be equipped with a sound knowledge of color and form. They must keep up with the new packaging materials constantly becoming available, and be willing to take on the tough problems that new materials often bring. Also important, they must be practical men, who realize that in volume-selling, prices for packaged goods must be kept competitive.

We sincerely believe that you will find no group of packaging people more alert, knowledgeable or eager to please than those in the Continental family.

CONTINENTAL CAN COMPANY

TAILOR-MADE PACKAGE SERVICE

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DON'T HIDE YOUR PRIDE!

DRESS UP YOUR PACKAGES FOR COLORFUL EYE AND SALES APPEAL

...with On-to-Sta

4 Color Printed Kraft Gummed Sealing Tape

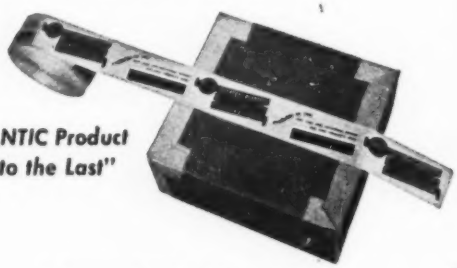
4 Points to remember about On-To-Sta 4 Color Sealing Tape

★ Every carton and package leaving your plant carries your 4-colorful advertising message everywhere.

★ Your packages are padlocked with your company's name —they're pilferage proof. Dust and dampness are locked out.

★ On-to-Sta tape is of uniform top quality. It seals securely and remains perfectly flat.

★ Our creative art staff will skillfully prepare art work for 4-color tape to fit your particular needs.



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"Sticks to the Last"

Ask your local jobber about ATLANTIC'S 4 Color Tape, or contact us directly.

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BUFFALO • BOSTON • HAVANA

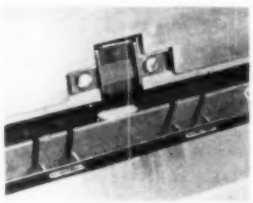
Equipment and materials

(Continued from page 137)

quantities can be accurately set for amounts from 0.5 to 30 cc. Dripping is entirely eliminated, it is said, and the machine automatically stops filling when the ampoule supply is exhausted or the needle (filling spout) is not exactly centered in the ampoule neck. Protective gases can be applied before or after filling. Sealing is done by the pull-seal method. Stainless steel construction and simple disassembly make the machine easy to clean and sterilize, according to the company.

A NEW CODE-DATING ATTACHMENT

for the Amsco Automatic Hi-Speed Jaw Bag Sealer, manufactured by Amsco Packaging Machinery, Inc., 31-31 48 Ave., Long Island City 1, N. Y., makes sealing, header labeling and code imprinting a single simultaneous operation. Up to five digits of an impression-type code date is possible with this attachment, each digit being ⅛ in. wide and 3/16 in. high. The impression is located in the center of the seal, ⅛ in. back from the front edge. A hole-punch attachment is also available for punching holes through the header label and bag.

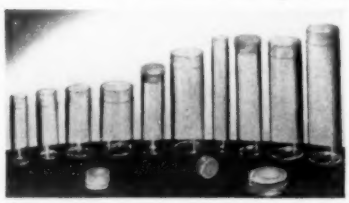


A NEW TYPE OF BREAD-WRAPPING PAPER

being offered to the bakery industry by the Western Waxed Paper Div., Crown Zellerbach Corp., San Leandro Calif., is reported to provide maximum strength and pliability, plus improved machine workability and reproduction of printed matter. Called "Preview," this new stock is the result of years of extensive laboratory work. The company's technicians have created an elastic-like material which, when combined with opacifying materials and applied to the surface of the paper, is said to improve the raw stock. The new mixture adheres to the stock surface as a smooth, uniform layer, it is reported.

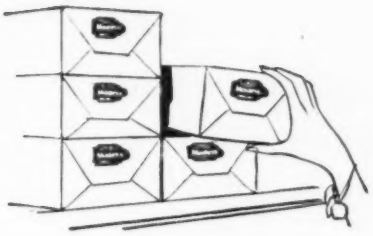
TWO NEW STOCK PLASTIC CONTAINERS

now being offered by Lermer Plastics, Inc., 502 South Ave., Garwood, N. J., are threaded-top and shoulder vials in the following sizes: ½ by 2 in., ½ by 3½ in., ¾ by 2 in., ¾ by 2 in., ¾ by 3½ in., 1 by 2 in., 1 by 3 in., 1 by 3½ in. and 1 by 4 in., ranging in capacities from 1½ dr. to 2 oz. Also available are shell vials with polyethylene plug closures in 4-dr. (11/16 by 2 7/16 in.) and 5½-dr. (11/16 by 3⅜ in.) sizes. All sizes are inside dimensions. The containers can be decorated in two styles: enameled in any color with printing on the enameled background in one or two additional colors, or printed in one or two colors without the enameled background. Minimum quantities that can be ordered are 1,000 plain containers and 2,500 decorated containers.

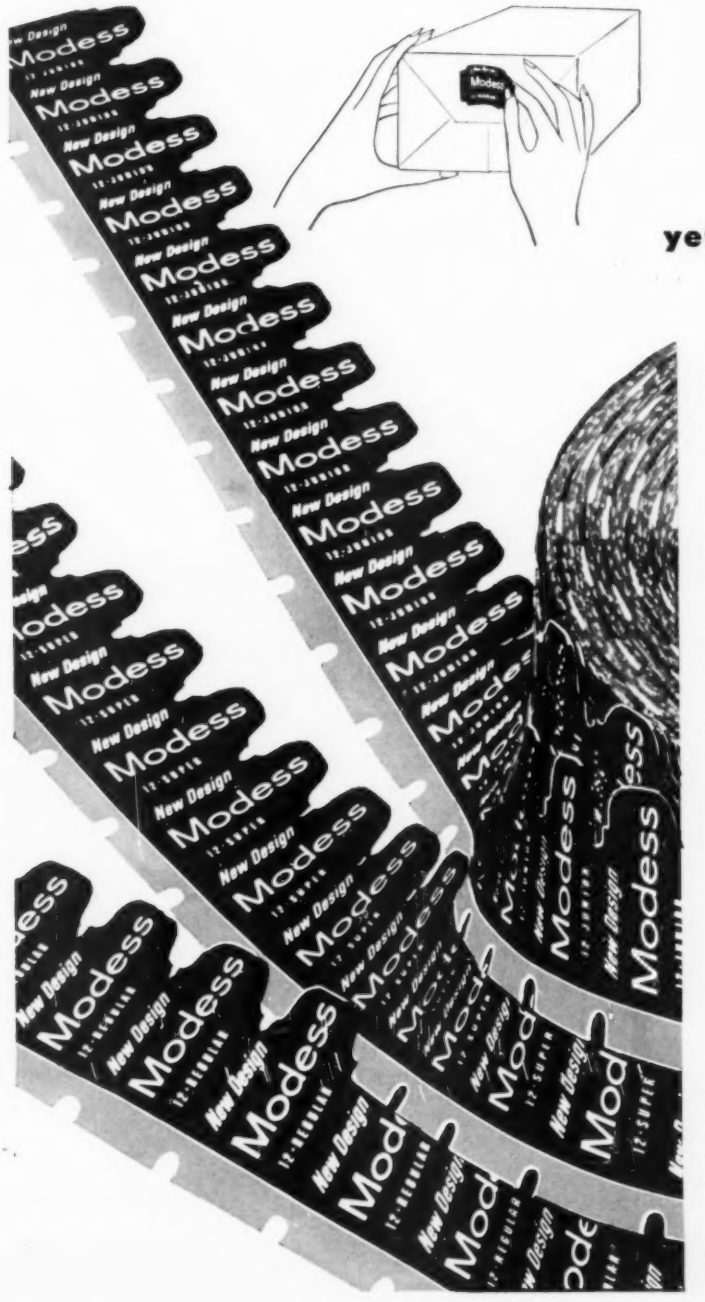


NEW HIGH-GLOSS COATED SOLID BOARD

for printed folding cartons, called LusterBoard, is being manufactured by S. D. Warren Co., 89 Broad St., Boston 1, Mass. The glossy white coated surface is designed to give a high-quality luxury appearance, suitable for the printing of fine halftone screens and gloss inks. Full benefit, says the manufacturer, is realized when the board is made to serve as part of the design



...because THE PACKAGE PLEASES!



How MODESS gains strong identity, yet prevents embarrassment

Many women are embarrassed when purchasing sanitary napkins. Yet, brand identity is a *must!*

A neat solution to this problem has been developed in cooperation with Personal Products Corporation, makers of MODESS, by Marathon's General Packaging Department. Only the tab end of a special roll-style label is sealed to a plain-wrapped package. MODESS gets brand impact, yet the customer can *tear off* the label.

Solving specialized packaging problems . . . working with specialized materials . . . is the job of Marathon's General Packaging Department. Why not use their resources to solve your packaging problems? Write Marathon Corporation, Dept. 703, Menasha, Wis.

MARATHON

SELL BRANDS · PROTECT PRODUCTS · SPEED PRODUCTION

PACKAGES

Whatever your packaging problem, Marathon's General Packaging Department offers you the same packaging research, engineering development and printing know-how that have made Marathon an outstanding leader in consumer packaging. Paper, paperboard, foils, films, special coatings—and combinations of these materials—are used to produce the right package for each job.

Produce Packages like these
* FASTER * BETTER
* AT LESS COST
on the revolutionary
Auto-Vac
THERMOPLASTIC
DRAPE and VACUUM
FORMING MACHINE
FULLY AUTOMATIC

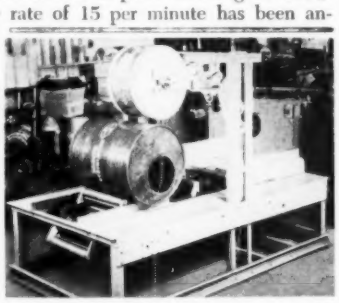
OPENS NEW SALES POTENTIALS FOR THOUSANDS OF MARKETABLE PRODUCTS HERETOFORE TOO EXPENSIVE TO PRODUCE!
Just glance at the items illustrated — made on an Auto-Vac. You just can't ignore the tremendous impact Auto-Vac makes in plastic package fabricating.
• push button control
• low initial investment
• occupies minimum floor space
• immediate production samples
• no skilled help required
• high speed mass production
• male or female molds
Engineered to handle sheets from .005" to ¼". Standard machine sizes, up to 48"x72". Specials upon request.
AUTO-VAC COMPANY
2120 3 Post Road Fairfield, Conn. Phone: Bridgeport 9-8338
Manufacturers of Fine Vacuum Forming Equipment

Equipment and materials

scheme by (1) covering the package only in part with high-gloss ink and making use of the gloss of the paper in unprinted areas and (2) by printing with screened plates which allow the gloss of the paper to show through. LusterBoard is recommended for packages containing pharmaceuticals, cosmetics, liquors, confections, jewelry, cigarette sleeves and many gift packages.

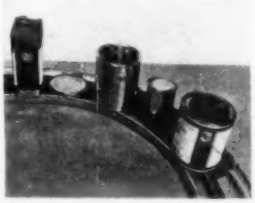
A NEW SELF-LOCKING CUSHIONED TRAY
which can be set up at the rate of 25 per minute on a simple former has been announced by Sherman Paper Products Corp., Dept. 20, Newton Upper Falls 64, Mass. This "Corro-Lok" tray, with corrugations in the inside, gives greaseproof cushioning on all five sides and increased ventilation to baked goods, the company reports. It is designed to meet the needs of bakers producing 200,000 or more units a year, or those large-production bakers who produce special seasonal baked goods. The new tray is particularly suited for cookies, doughnuts, cup cakes, French pastry, dump-pack cookies and crackers. Supplied to the baker as die-cut blanks, the trays are inserted one at a time into the carton former. One quick stroke of the lever sets up and locks the tray, then drops it out at the bottom. The carton former can be arranged in the production line to drop the set-up trays, ready for filling and overwrapping, into a tote box, a chute or a conveyor belt. The Corro-Lok carton former is supplied the baker on a free lease basis with his order of Corro-Lok trays. The trays are available in any practical size, in one- or two-color printing and also custom printed.

A NEW AUTOMATIC DRUM PRINTER
that enables easy and economical in-plant marking of 100# and 250# drums at the rate of 15 per minute has been announced by the Industrial Marking Equipment Co., 454 Baltic St., Brooklyn 17. Its use eliminates the need for an expensive screening system of printing. The operator loads the drum onto cradles which then position it under the continuously revolving printing wheel. The wheel spins and prints the drum, then the drum is ejected. Different diameters of drums are taken care of by the raising and lowering of the printing heads.



A NEW CAN CONVEYOR
for conveying cans and similar items with rimmed bottoms through any desired path at fixed or variable speeds ranging from 0 to 12 ft. per minute has been announced by the M-H Standard Co., 515 Communipaw Ave., Jersey City 4, N. J.

Applications for this new can conveyor include conveying through inspection, ovens, coolers, washers, gamma radiation and other processes requiring slow-speed movement. Its main features are reported as economy, trouble-free operation, silence, compact design, ease of installation and prompt delivery. Cans can be loaded or unloaded from this new "Monoflo Canveyor" at any point. They are supported



BIG SAVINGS

when you bundle your packages by machine

Machine bundling gives you a completely automatic operation that cuts costs amazingly... Packages are fed directly from the cartoning or overwrapping machines to the bundler. This machine assembles them in any desired manner, seals them in tough kraft paper and attaches printed end labels.

Since the bundling machine is adjustable for different sizes, you need no longer carry a variety of costly cardboard boxes in stock — and you save the cost of packing by hand. Transportation costs are lowered too — paper is so much lighter.

Savings often pay for a bundling machine within six months. From then on these savings help sweeten profits considerably.

We have developed various types of bundling machines and can supply you with a model exactly suited to your production set-up.

Write for complete information

PACKAGE
MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS

NEW YORK PHILADELPHIA BOSTON CLEVELAND CHICAGO
ATLANTA DALLAS DENVER LOS ANGELES SAN FRANCISCO
SEATTLE TORONTO MEXICO, D.F.

Fully-automatic Tube Filling and Closing Machine

Standard Type with manually fed tubes.

Special Type with automatic tube feeder, photo-electric centering of print and cap tightening device. Four different types of closure.

IWK *(Manufactured in West Germany)*

INDUSTRIE-WERKE KARLSRUHE

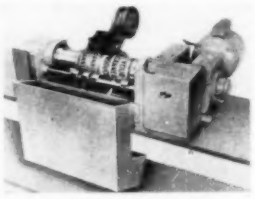
Aktiengesellschaft / KARLSRUHE

Equipment and materials

throughout travel on a metal track and are propelled by the flexible-rotating Monoflo cable. It is a one-way conveyor, requiring no idle return loop, and is available in fixed or adjustable widths to handle cans of any size. The 6-in.-wide conveyor illustrated handles round and rectangular cans from 1 gal. to 1 qt.

A PORTABLE CAN-BANDING MACHINE

for banding cans end-to-end into combination deals has been announced by the Dellenbarger Machine Co., Inc., 379 W. Broadway, New York 12. The compact machine, which is made in several models to accommodate two or more cans of any shape or dimension, utilizes ordinary commercial pressure-sensitive tape—plain or imprinted. Only one operator is needed to feed the machine. Use of this new "Canbander" enables the packer to produce the increasingly popular combination deals in his own plant without outside help. He can also vary his combination deals at will and include seasonal and holiday combinations, special bargain deals, etc., as desired.

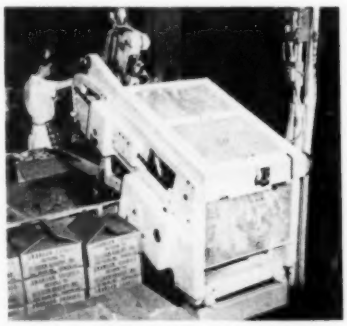


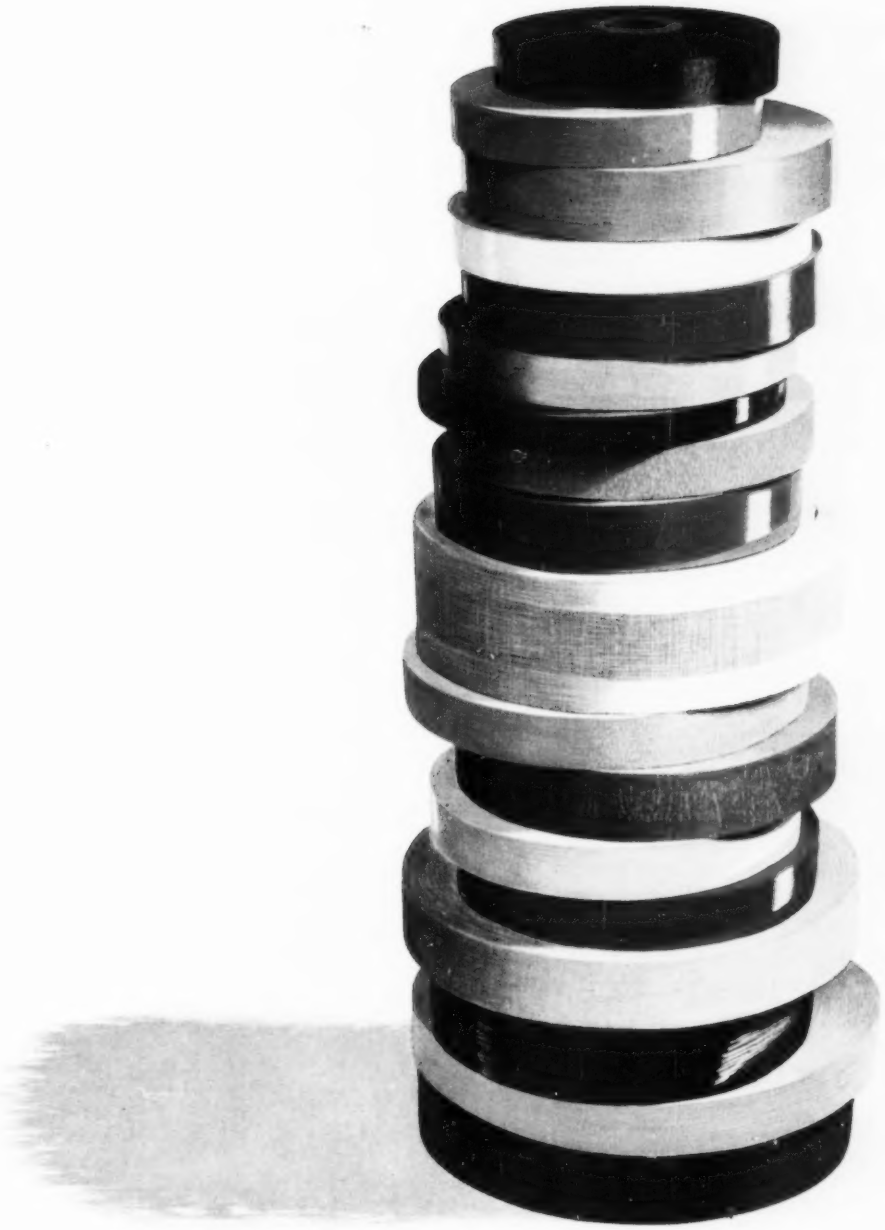
A NEW TYPE OF VISIBILITY PACKAGING

developed by the Folding Carton Department of Morris Paper Mills, Melrose Park, Ill., is called "Pres-o-Lite." Designed especially for the merchandising of small products in self-service stores, it combines paperboard and a formed transparent plastic sleeve that gives protection against dust and tampering while providing visibility. The plastic sleeve, formed to the shape of the product to be packaged, fits between two sheets of board which are glued together. A perforated tab is provided on the back piece of board for lifting out the product. Ample space is provided on the board for printing sales copy.

AN ADJUSTABLE COOKIE-WRAPPING MACHINE

that accommodates packages from 4 to 16 in. long, 2 to 9½ in. wide and ¾ to 5¼ in. high, and which can be adjusted for a given package size in 2 min., is being offered by the Package Machinery Co., East Longmeadow, Springfield, Mass. This new "Universal 6" machine is reported to be speedy and economical, and uses any type of heat-sealing cellophane, including saran-coated cellophanes. Two hand-wheel adjustments set the machine for the length of a package. Its self-measuring wrapping-material feed takes care of variations in height and width. Two or more cookie packages having the same package length and paper-roll widths, but having different package thicknesses and widths, can be run intermittently without any adjustments whatever, according to the company. An adjustable card feed handles both U-cards and flat cards. A Thermo-Print top labeler can also be supplied which imprints thermoplastic labels,





whatever the job . . .

SELF-STICKING

PERMACEL® TAPES

In our complete line, there's a self-sticking tape for every job . . . write Permacel Tape Corporation, New Brunswick, N. J.

the customer helps you sell him again when you use Lermer plastic containers

again
again
again
again
again

Shatterproof, Lermer plastic containers have high utility in themselves. Your customers will find them useful for keeping anything from fishing flies to pins and needles. You benefit too, from these extra uses. The customer places new values on your Lermer packaged merchandise, and the extra brand exposure you get assures recognition when he buys again.

COMPARE THESE UNEXCELLED ADVANTAGES OF LERMER PLASTIC CONTAINERS:

- They Are Shatterproof, Assuring Customer Good Will
- 75% Lighter Than Glass, Saving You Money in Packing and Shipping
- Not Affected by Alcohols, Alkalis, Weak Acids
- Tasteless and Odorless
- Available Clear or Opaque, in a Host of Bright, Lustrous Colors
- Can be Printed or Decorated During Manufacture
- Always Uniform for Easy Labeling, Filling and Capping
- Available with Metal or Plastic Closures

Write for complete catalog information and samples. Detail your problems and let our creative staff help. Lermer is famous for Experience, Service and Creative Engineering.

Lermer PLASTICS, INC.

Pioneers and Specialists in Plastic Containers

502 South Avenue, Garwood, New Jersey

REPRESENTATIVES IN PRINCIPAL CITIES

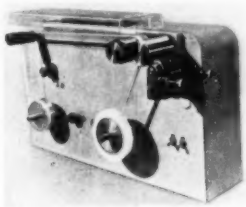
Equipment and materials

cuts them from a roll and applies them to the tops of packages. The machine has an adjustable speed range of from 15 to 40 packages a minute. Standard infeed allows 5 ft. of loading area and additional conveying extensions to 30 in. and 77 in. are available.

NEW METAL COVER-ALL DAIRY LIDS
designed for sturdier, more eye-appealing packages have been announced by the Continental Can Co., 100 E. 42 St., New York 17. The positive seal provided by this new closure is reported to give good product protection and preservation, and to be priced competitively with other comparable types of cover-alls. Double-seal construction of the new metal lid affords a second positive seal at the top rim of the paper container, in addition to the regular seal at the lid groove. This warp-free metal lid enables greater filling and capping speed and precision, thus lowering production costs for the dairy processor. Initial experience is reported to indicate longer shelf life for containers strengthened with this rigid closure. The lids can be lithographed in a wide variety of colors and designs. They are easily opened with thumb pressure or a hook opener and easily reclosed.

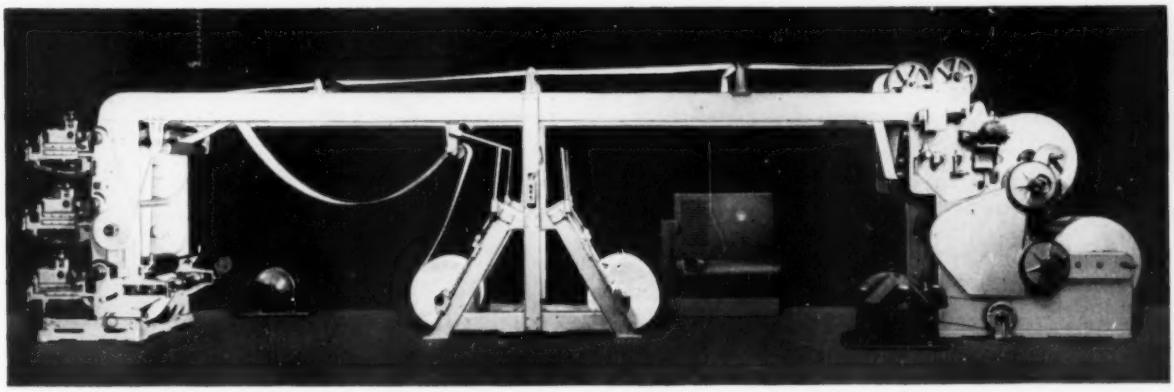
As a companion line, Continental Can Co. is also marketing paper cover-all lids. Both types are available in three sizes—for 8-, 12- and 16 oz. containers.

A NEW TAPE-PRINTING MACHINE
that will accommodate pressure-sensitive tape in widths up to 1 in. has been announced by the Printing Machinery Engineering Co., 1111 Eleventh Ave., Oakland, Calif. The unit does one-color printing by the flexographic process from rubber plates 0.125 thick and is equipped with a 7-in. circumference cylinder. Ink and impression pressures can be adjusted while the unit is running. A separately controlled 50CFM blower furnishes unsaturated air for drying; a heater can be provided at additional cost. Constant-tension rewind is accomplished by a clutch which can be controlled from the front of the machine while it is running. Side register is also controlled from the front on both mill roll and rewind shafts and can be moved when the machine is running. Ample space is provided to use jumbo rolls as well as standard 72-yd. rolls. According to the company, 36-yd. rolls can be rewound without any mechanical changes and a 1-in.-diameter rewind chuck can be furnished as an extra. Approximate over-all dimensions are 15 in. high by 22 in. long and 10 in. in depth. Weight is about 75 lbs. A similar press for printing 3-in. widths of tape, equipped with a heavier drive, is also available.



A NEW ASEPTIC VIAL FILLER
with stainless-steel filling units equipped with adjustable Teflon piston rings has been announced by the National Instrument Co., 5005 Queensbury Ave., Baltimore 15, Md. The new Filamatic units are available in two types: the FU-15, having a capacity of 1 to 15 cc. per stroke, and the FU-130, with a capacity of from 10 to 15 cc. per stroke. It dispenses any free-flowing liquid, including saturated solutions and suspensions.

Modern **MANHASSET** *Multicolor Flexographic Presses... the answer to more printing production and better quality, too*



Model shown (APS #336) is 3-color Manhasset Press for webs to 36" wide. Other models available for wider or narrower webs, more or fewer colors.

New MANHASSET Presses are high-speed, multicolor flexographic machines for printing, tinting and coating a wide range of paper and board stocks. Engineered to meet today's standards of high-volume production and critical quality, MANHASSET Presses turn out clean, in-register impressions consistently at regular running speeds up to 600-fpm... have features that minimize down-time between jobs by permitting easy, extra-rapid change-over of copy and colors. Flexible and versatile, MANHASSET Presses are quickly adjustable for handling different weights of stock — from lightest tissue to 45-pt. board — and may include perforating, punching, sheeting or other auxiliary equipment. Standard models have automatic constant tension and edge controls, power-driven twin-roll unwind, center-core rewinder, gear-driven rotary shear slitter, many new up-to-the-minute design features.

For complete information
write — wire — phone

MANHASSET

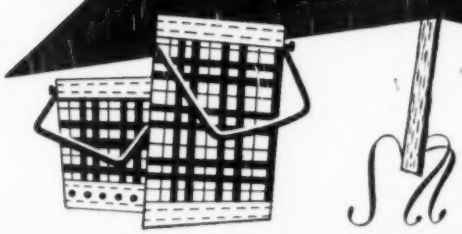
MACHINE CO.

Mineola, New York

IMMEDIATE DELIVERY

America's **#1** Christmas re-use gift packages;

Skotch Koolers and Skotch Grills



HAMILTON METAL PRODUCTS CO., HAMILTON, OHIO

new!

AVERY

PERMA-GRIP

LABELS

available now!

- • • The greatest improvement in pressure-sensitive labeling yet... they stick to the job and *stay stuck!*
- • • Developed by the pioneer makers of pressure-sensitive labels for those *extra tough* applications!
- • • Write for free Perma-Grip samples – try 'em yourself! See how they stick to *your* package or product.

AVERY ADHESIVE LABEL CORP., custom div. 127
117 Liberty Street, New York 6 • 608 South Dearborn Street, Chicago 5
1616 S. California Ave., Monrovia, Calif. • Offices in other Principal Cities

☐ Send us free samples of Avery's new Perma-Grip labels

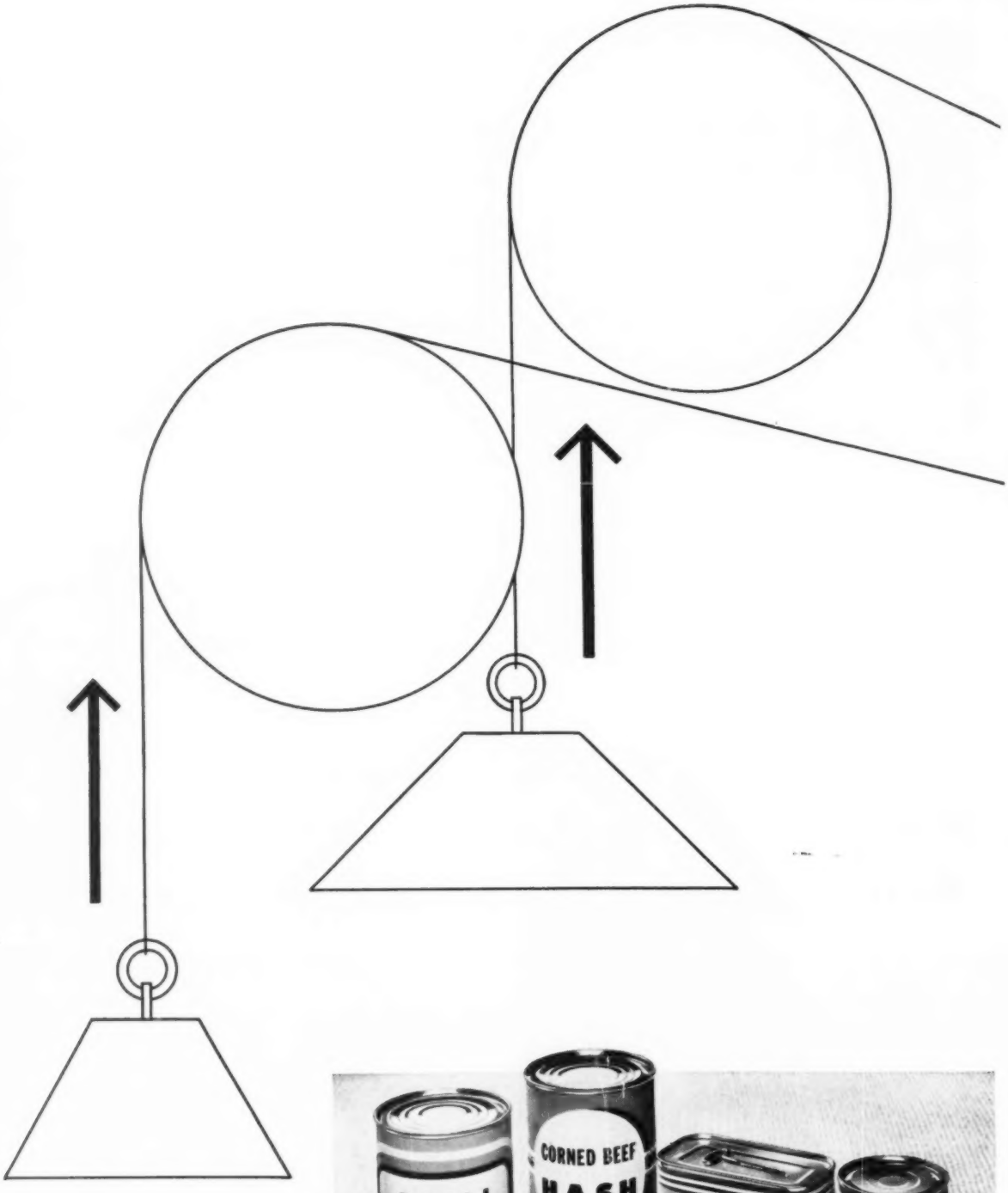
☐ Have the Avery man call

Name_____

Company_____

Address_____

City_____ State_____


CHILI
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VIENNA
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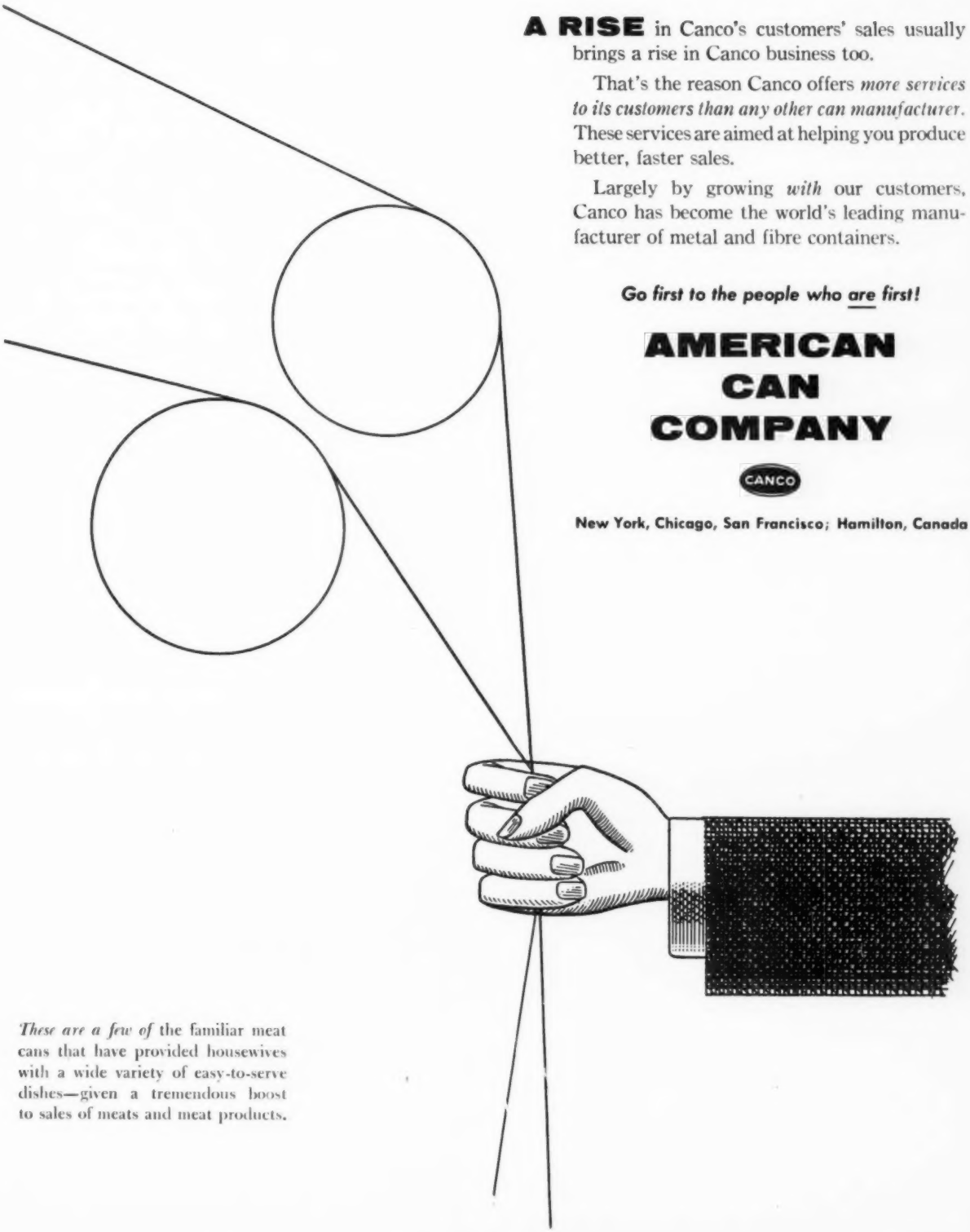

A RISE in Canco's customers' sales usually brings a rise in Canco business too.

That's the reason Canco offers *more services to its customers than any other can manufacturer.* These services are aimed at helping you produce better, faster sales.

Largely by growing *with* our customers, Canco has become the world's leading manufacturer of metal and fibre containers.

Go first to the people who are first!

AMERICAN CAN COMPANY

CANCO

New York, Chicago, San Francisco; Hamilton, Canada

These are a few of the familiar meat cans that have provided housewives with a wide variety of easy-to-serve dishes—given a tremendous boost to sales of meats and meat products.

Plants and people

A new research laboratory for the Film Dept. of **E. I. du Pont de Nemours & Co., Inc.**, Wilmington, Del., will be built at the company's experimental station in Wilmington. Representing an investment of $1,275,000 in facilities for fundamental and long-range research for new and improved films, the laboratory will be devoted primarily to research in synthetic polymers for the general field of packaging and industrial films. The new laboratory, to be a two-story structure accommodating about 45 employees, will be operated in addition to the department's present Buffalo, N. Y., research laboratory.

Du Pont has established a new Organic Chemicals Dept. sales-training section, under the direction of **Emory M. Fanning**, for training new sales personnel and refresher training for salesmen of the four divisions of that department—Petroleum Chemicals, Rubber Chemicals, "Kinetic" Chemicals and Dyes & Chemicals. Replacing Mr. Fanning as assistant sales director of the "Kinetic" Chemicals Div. is **William A. Bours, III. Francis L. Shackelford, Jr.**, has replaced Mr. Bours as chemical sales manager of the Dyes & Chemicals Div.

Stockholders of **Olin Industries, Inc.**, and **Mathieson Chemical Corp.** have voted in special meetings at East Alton, Ill., and Saltville, Va., to approve the merger of the two companies to form a new corporation, **Olin Mathieson Chemical Corp.** After the merger, **John M. Olin** will become chairman of the board of Olin Mathieson and **Thomas S. Nichols** will become president. **John W. Hanes** will be chairman of the finance committee. No change in basic operations is presently contemplated.

J. M. Olin (left) and T. S. Nichols, board chairman and president, respectively, of the new Olin Mathieson Chemical Corp.

Armour & Co., Chicago, has announced that production of rubberized curled hair for use as a cushioning material is expected to start this month at a new Los Angeles plant now under construction. The plant will be operated as the West Coast Div. of the Armour Curled Hair Department. **Victor Anderson** is manager of the West Coast Div.

P. R. Curtis, Jr.

Paul R. Curtis, Jr., has joined **Sun Tube Corp.**, Hillside, N. J., as products manager in charge of tube sales. Mr. Curtis was formerly associated with the Plax Corp., Hartford, Conn., and has had extensive sales experience, particularly in the New England area.

M. Wayne Marcoux has been appointed packaging engineer for the Ekco-Foil Container Div. of **Ekco Products Co.**, Chicago, responsible for development of new food packaging uses for Ekco's rigid aluminum foil containers and to work on technical problems.

Ekco Products has purchased all outstanding stock and facilities of **McClintock Mfg. Co.**, Los Angeles, manufacturer of food-handling equipment and accessories for the meat industry. McClintock will become a wholly owned Ekco subsidiary. **Robert L. Lang** will continue as McClintock president and no change in McClintock policies or personnel is contemplated.

Milprint, Inc., Milwaukee, Wis., has appointed **George Brenard** and **William Shuster** as sales representatives. Mr. Brenard will work out of the Milwaukee office and Mr. Shuster will work in a Pennsylvania location. **Robert H. Minor** has been made a sales representative in Philadelphia.

The Shaw-Randall Co., Inc., has moved to the Hotel Duane, 237 Madison Ave., Suite 3D, New York.

W. H. Funderburg has been made a member of the sales research committee of **National Can Corp.**, Chicago.

Packer Machinery Corp., New York, manufacturer of liquid vacuum and gravity filling equipment, has appointed **Fred H. Palmer, Jr.**, Palmer Supplies Co. of Florida, as its representative.

Chase Bag Co., Chicago, has announced plans for the expansion of its Minneapolis branch. Over $400,000 worth of multiwall bag-making and printing equipment will be installed there in the near future. Chase will produce a complete line of multiwall paper bags in addition to textile bags and consumer-sized paper flour bags at the new facilities.

St. Regis Paper Co., New York, and **North Canadian Oils, Ltd.**, Calgary, Alberta, have announced a joint plan for the financing and construction of a 300-ton mill for the production of bleached sulphate kraft pulp at Edson, Alberta. St. Regis will take a substantial part of the mill's output and will sell the balance through its sales organization.

Printloid, Inc., New York, has installed new equipment which will print on large plastic sheets up to 21 by 28 in. in various thicknesses. The larger sheets are particularly adaptable for vacuum forming, packaging and signs.

A. R. Kohl *R. F. Miller*

The Glass Container Div. of **Owens-Illinois Glass Co.**, Toledo, Ohio, has given **Arthur R. Kohl**, manager of the Household & Chemical Div., the added duties of manager of the Toiletry & Cosmetic Div. **Robert F. Miller**, manager of the Prescription Ware Div., has been given the additional responsibilities of manager of the Pharmaceutical & Proprietary Div.

Sun Supply Corp., Div. of Sun Chemical Corp., Long Island City, N. Y., has appointed **Richard T. Blair** to represent the company in Washington, D. C., Maryland and Virginia.

Conway plaque

A bronze plaque of **Carle C. Conway**, chairman of the executive committee of **Continental Can Co.**, New York, has been unveiled in Deventer, Holland, at the new research laboratory of **Thomassen & Drijver**, Holland's largest manufacturer of metal containers. The plaque was unveiled by Mrs. Conway during the dedication ceremony for the new laboratory, named in honor of her husband.

Thomas G. Simota has been named manager of Continental's metal-can plant in Milwaukee. Mr. Simota succeeds **Car-**

save packing
TIME

utilize
SPACE

eliminate damaging
MOTION

HINDE & DAUCH

Authority on Packaging

12 FACTORIES • 40 SALES OFFICES

Write for booklet, "How to Ship More Economically in Corrugated Boxes." Hinde & Dauch, Sandusky 4, Ohio.

you can

Pack Anything with

AMERICAN EXCELSIOR CORPORATION
PROTEX
CHICAGO, ILL.

SUPERIOR CUSHIONING PADS & BLANKETS

and save money, too!

PROTEX pads and blankets give you the *maximum* interior cushioning protection obtainable and fit virtually any product or assortment you can name! The cost is substantially lower than most other forms of interior cushioning and take only a fraction of the time to pack. Avail yourself of this *important* money-saving clean method of packing. The protection your products get is superb... resists all forms of shock and protects the finish of the product as well. Ease of packing, availability of ample supplies of packing material on hours notice are important too... you don't have to order far in advance of production or store supplies all out of proportion to their rate of consumption.

Consult us— Present your packing problems to us for complete package engineering design and service by experts. We will show you how to improve package performance and save money too!

WRITE, WIRE, OR PHONE US

AMERICAN EXCELSIOR CORPORATION

1000 N. Halsted St., Chicago 22, Illinois

NATIONWIDE SALES & DISTRIBUTION

Plants and people

roll F. Marquard, who has been transferred to Chicago as manager of production engineering. **Ellison L. Hazard** has been named general manager of the Northeastern district of Continental's Eastern Metal Div.

Continental has broken ground in Chicago for a new research and development center for the Metal Div. The building, a three-story structure, will cover more than 200,000 sq. ft. of floor space.

The Paterson, N. J., plant of Continental has begun production on metal cans for carbonated beverages. The plant will make both flat-top and cone-top containers, designed with special side seams and inside linings.

National Starch Products, Inc., New York, has appointed **Robert DeWolfe** as supervisor of New York sales. He will be responsible for adhesive sales in New York State, Northern New Jersey and New York City. The appointment of Mr. DeWolfe will permit **Lester Klempner,** Eastern sales manager, to devote more time to over-all Eastern sales.

R. DeWolfe

National Starch has completed plans for an aid-to-education program, under which National Starch has established undergraduate scholarships of $2,000 each at Columbia University, Case Institute of Technology, University of Nebraska, North Carolina State College, Syracuse University and Rutgers University. The scholarships, to be granted in the general fields of chemistry and chemical engineering, will be granted to applicants in need of financial assistance who are outstanding scholastically and character-wise. To aid the schools in defraying administration of the scholarships, the company is also awarding an additional sum annually to the chemistry departments of the schools concerned. In a further attempt to attract more students to the chemical field, the company plans to establish additional grants to meritorious graduates of local schools where National Starch plants are located.

Donald G. Marshall has been appointed electronics development engineer on the engineering staff of the **Exact Weight Scale Co.,** Columbus, Ohio.

E. L. Bivans, Inc., Los Angeles, designer and manufacturer of automatic packaging machinery, has constructed a

new factory at 2431 Dallas St. which has increased production by 130%. The new facilities are part of a long-range program to expand production of automatic carton-handling machines.

Phillip C. Althen has been appointed head of the newly created packaging section of the Sales Development Div., **Aluminum Co. of America**, Pittsburgh, Pa. Assisting Mr. Althen will be **Richard C. Manchester** and **Robert H. Tooker.** The new section will concentrate on rigid, semi-rigid and flexible packages and offer technical assistance to commercial packagers and container manufacturers. It will also conduct research on aluminum packages and closures.

P. C. Althen

Aluminum Limited Sales, Inc., New York, U. S. distributor for Aluminum Co. of Canada, Montreal, has opened a branch office in the Curtis Bldg., 2842 W. Grand Blvd., Detroit, Mich., to meet a growing demand by fabricators in the state for Canadian aluminum. The new office will be headed by **Leo Reierstad.**

A major expansion of the shipping and warehouse facilities at the St. Louis plant of **American Can Co.**, New York, has been announced. The new facilities will be adjacent to the company's existing can-making plant. The addition is scheduled for completion this year. **V. J. Verhunce** is in charge of American Can's St. Louis plant.

American Can has named **Frank R. Grote, Jr.**, superintendent of the company's new Denver plant.

The American Can Co. has appointed **G. T. Bergstrom** as superintendent of manufacture of the company's Pacific division. Mr. Bergstrom will supervise the operations of Canco's factories at Seattle, Wash., Portland, Ore., Vancouver, B. C., and Sacramento, Stockton and Oakland, Calif., from headquarters in San Francisco. **Leonard B. Jenkins** has retired as Northwest district sales manager and will be succeeded by **William Flynn.** The Northwest district includes Washington, Alaska and a portion of Idaho.

E. F. Miles

Standard Packaging Corp., New York, has appointed **Edwin F. Miles**, who has represented the **Missisquoi Corp.** in New England since 1949, to the position of sales manager of the **Fonda Container Co., Inc.**, Both Missisquoi and Fonda are affiliates of Standard.

Arkell & Smiths, Canajoharie, N. Y., and **Union Bag & Paper Corp.**, New York, have signed an agreement under

For printing continuous all-over patterns without seam or break

MOSSTYPE Rubber DESIGN ROLLERS

Custom-made with your design—single or multicolor—for use on any web press with removable plate cylinders . . . flexographic and oil ink. Widely used for printing box coverings, trademark papers, gift wraps, corrugated liners, folding cartons, merchandise bags, labels, wrappers, counter rolls, cups and containers, carbon papers, security tints, etc.

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SATISFIED WITH YOUR PRESENT PACKAGE

IS IT STANDING UP

DOES IT HAVE SALES APPEAL

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IF NOT

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CELLOPHANE
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TRY OUR LAMINATIONS & COATINGS

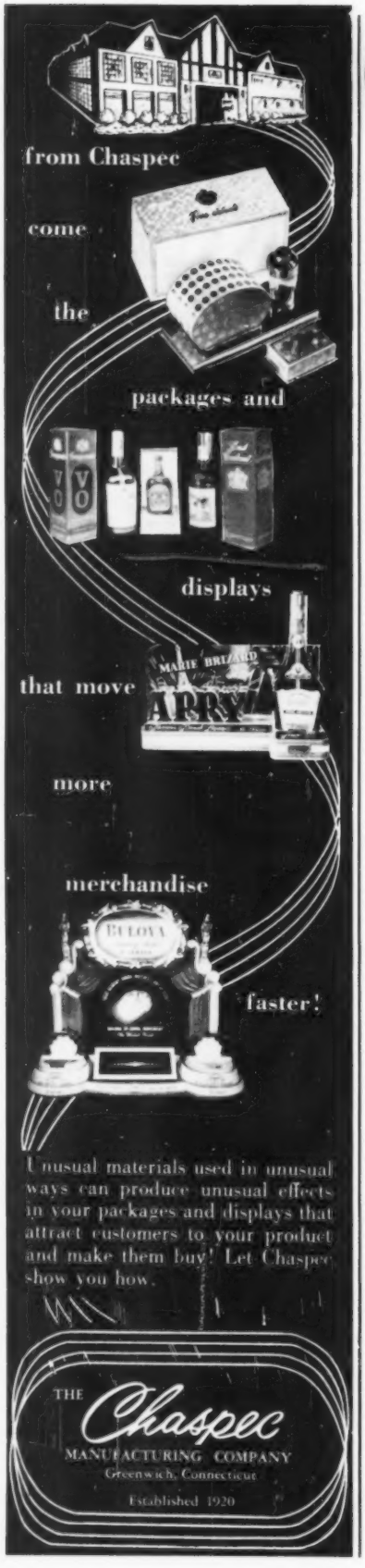
Our engineers and designers will help you custom-create a package with point-of-sale appeal. Avail yourself of this Melrose service at no obligation.

also Grade A & C Military Requirements

LAMINATED & COATED PAPER CO.

A DIVISION OF MELROSE PACKAGING

380 Dwight Street — Holyoke, Mass.



Plants and people

which **Arkell & Smiths** has purchased the Hudson Falls, N. Y., bag plant formerly operated by **Union Bag**. Under the agreement, Union Bag will continue as a selling agent for the plant. The purchase does not include the Honeycomb operation, the product development research laboratory or the machine shop, all of which will continue to be operated by Union Bag.

Bertram Schwartzberg has been appointed manager of the newly created export division of **Shelton Mfg. Co., Inc.**, Newark, N. J. The new division will market single-faced corrugated board in rolls and sheets, corrugated containers and flexible corrugated board.

A new chemical firm known as **Mono-Sol-Corp.** has been established in the Gary, Ind., area to manufacture plastic films and sheeting. The corporation will manufacture polyvinyl chloride film and polyvinyl alcohol film. **E. M. Kratz** is vice president of the new corporation, with **M. H. Sprague** as general superintendent and **C. S. Quillen** in charge of chemical research.

Harry E. Hadley, mill manager for **The Gardner Board & Carton Co.**, Middletown, Ohio, has been named president of the **American Pulp & Paper Superintendents Assn.**

Gardner Board & Carton has appointed **Dan W. Hill, Jr.**, as a carton carrier salesman. Mr. Hill's territory will include the southeastern states.

The Dobeckmun Co., Cleveland, Ohio, converter and printer of packaging films and foils, has appointed **Robert Parmelee** to its Philadelphia sales force.

Eugene H. Klingelfuss, former president of Klingrose Machine Corp., Brooklyn, N. Y., has established the **Eastern Foil Corp.**, Route 23, Pompton Plains, N. J., to serve the foil-laminating field. Associated with Mr. Klingelfuss, who is president of Eastern Foil, are **Fred Brombacher** as vice president and **John Siebenmann** as secretary-treasurer.

The Black-Clawson Co., Fulton, N. Y., has appointed **Robert R. Crawford** of its Shartle Bros. Machine Div. as general manager of **Black-Clawson International, Ltd.**, British subsidiary. Mr. Crawford will headquarter at Black-Clawson House in London. Associated with Mr. Crawford will be **Barrie Dixon** and **T. C. Miller**, deputy managing directors of the firm, and **P. H. Fogg**.

Raymond S. Freeman has joined the technical staff of the **H. B. Fuller Co.**, adhesive manufacturer, St. Paul, Minn.

John P. Fairfax has joined Fuller's technical staff in San Francisco. Mr. Fairfax's duties include customer service on technical matters and development of new adhesives.

Harold E. Wheeler and **Guy A. Busch** have joined the H. B. Fuller Co. of Georgia. Mr. Wheeler is the new plant engineer and Mr. Busch is handling sales in Alabama. **James R. Kadidlo**, presently covering that area, will represent the company in Georgia.

R. D. Lowry

Dewey & Almy Chemical Co., Cambridge, Mass., has appointed **Robert D. Lowry** as technical director of its Cryovac Div., a newly created post. Mr. Lowry has been manager of Cryovac product development for the past five years.

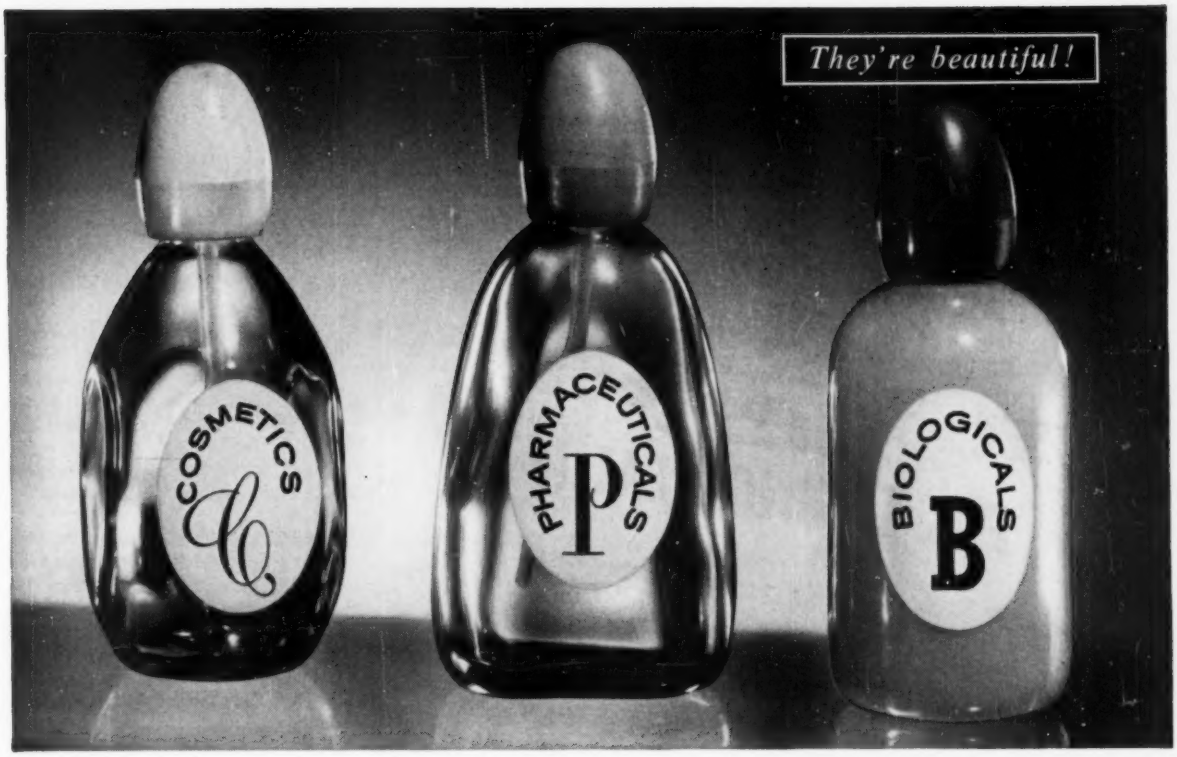
Dewey & Almy Chemical Co. of Canada, Ltd., Montreal, has appointed **David D. Lindsay** as sales manager to supervise sales in Canada of plastic bags and equipment for use in the Cryovac process. Mr. Lindsay will headquarter in the newly opened office in Toronto.

Sealright Co., Inc., Fulton, N. Y., has announced that its associated company, **Sealright Pacific, Ltd.**, has scheduled for completion in October and for full-scale operation by January, 1955, a new factory and headquarters at Herbert and Noakes Sts., East Los Angeles. Sealright Pacific supplies paper containers and closures to food industries in the Pacific Coast states.

R & R Paper Converting Co., Los Angeles, has named **E. B. Riddle** as sales manager, a recently created post.

Anthony C. Kupris has been appointed general advertising manager of **R. M. Hollingshead Corp.**, Camden N. J., replacing **R. E. Conley**, resigned.

Frederick Parks has been appointed southeastern sales representative for **Brown-Bridge Mills, Inc.**, Troy, Ohio. Mr. Parks will headquarter in Charlotte, N. C., and cover the South Atlantic States, Tennessee and Alabama on the complete Brown-Bridge line of gummed papers, heat-seal papers and gummed tapes. **W. D. Wigmore**, former Brown-Bridge representative in the southeastern territory, has returned to the main office in Troy as a



New Glass-Lined Plastic Bottles Combine Aerosol Spray and 100% Safety

25-foot drop onto concrete fragmented the glass of this bottle. But not one sliver escaped through the tough plastic wrap.

Plastic wrap, here shown cut away, makes these Wheaton bottles always safe.

Available in both stock and custom-made designs

Here for the first time are put together the beauty and sales appeal of a distinctive glass bottle, the convenience and sales appeal of aerosol spray, and the safety and sales appeal of plastic. That makes three different kinds of sales appeal in one container . . . a sort of dream container combining everything the sales, advertising, production and insurance departments could wish for.

You can see for yourself, in the photograph, the beauty of the three stock designs. Your own special design can be moulded in sizes up to 4 ounces. You have your choice of transparent, translucent or opaque plastic, in a wide range of colors. We can silk-screen any design in any color on the plastic or the glass itself.

These bottles always give a true aerosol *spray*—not a squirt or stream. The plastic coating means that dangerous explosions can't happen. The glass isn't likely to break, even when dropped onto a bathroom floor. But if it should, *it cannot cut through the plastic cover.*

Perhaps you have a product that can benefit by the unique combination of practical and promotional advantages offered by these bottles. Then you'll want to write for full information today.

WHEATON PLASTICS COMPANY

MAYS LANDING, N.J.

Announcing

CARGO PACKERS
SPECIAL PRODUCTS CO.
National Distributor for
Thermatron*
PACKAGING SEALING

*A PRODUCT OF RADIO RECEPTOR CO. INC

—the faster, lower cost packaging method that makes Hard Goods EASIER TO SELL!

New THERMATRON SEALERS for acetates, saran, vinyls and other hard-to-heat materials opens the door to economical hard goods packaging. Now plastic wraps—spheres, envelopes and other semi-rigid packaging devices—can be sealed in your own plant, quickly, easily, economically. THERMATRON makes seals up to 12" long on .005" or heavier cellulose, acetate, vinylite; makes area seals up to 12" long and 8" wide. Seals up to the edge of the material. For complete information on this unique method of product protection . . . and sales enhancement . . . write today!

Thermatron Protective Packaging Safeguards

DELICATE COMPONENTS

Vital, sensitive components, assemblies, small instruments enjoy ready acceptance when protected against dirt and dust contamination . . . rough handling, etc.

NEW ILLUSTRATIVE DESCRIPTIVE BULLETINS AVAILABLE ON REQUEST

CLIMATE PROOF PACKAGING
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DISTRIBUTED NATIONALLY BY

CARGO PACKERS SPECIAL PRODUCTS CO.

73 RUTLEDGE STREET, BROOKLYN 11, NEW YORK

Plants and people

purchasing agent. He replaces **Scott R. Bridge**, deceased.

W. J. Smith

William J. Smith has been appointed manager of the Specialties Div., **Sherman Paper Products Corp.**, Newton Upper Falls, Mass. Mr. Smith, who joined Sherman over a year ago has had experience in paper converting, printing and sales management.

Spencer Chemical Co., Kansas City, Mo., has appointed the following district sales managers: **George N. Olson**, eastern district (New York); **Howard Millington**, Kansas City office; and **H. R. Bishop**, north-central district (Chicago). The reorganization signals Spencer's entry into the polyethylene field and the company's general expansion in industrial chemicals.

The Avery Paper Co., Painesville, Ohio, has started production of dry-adhering pressure-sensitive papers for the graphic-arts industry. The new plant has modern manufacturing and production-control equipment and an experienced production staff. The Painesville plant will serve the area east of the Rockies.

Robert S. Bloomer, Sr., has been named president and director of sales of **Bloomer Bros. Co.**, Newark, N. Y., manufacturer of paperboard and folding paper boxes. Mr. Bloomer succeeds **George L. Richmond**, deceased. **Harrison C. Bloomer** has been elected vice president and general manager, and will have charge of production. **Wilson C. Bloomer**, also a vice president, now has added responsibilities in the fields of maintenance and engineering. A re-organization of the sales department following Robert Bloomer's promotion to the presidency included: **William N. Robson**, assistant director of sales; **John E. Hutchinson**, sales manager; **T. R. Beales**, assistant sales manager; and **Almeda V. Milbrook**, sales assistant to the president.

R. S. Bloomer, Sr.

Brown & Bigelow, St. Paul, Minn., has purchased **Herb-Shelly, Inc.**, Farmington, Minn., manufacturer of polyethylene bags and liners. Manufacturing operations and personnel of Herb-Shelly will be retained in their entirety in Farmington. **Gilmore T. Schjeldahl** will remain as president of

FOR TOUGHNESS

. . . when the going is tough
J & L STEEL CONTAINERS
CAN TAKE IT

J&L Steel Drums and Pails meet the most rigid tests for durability because:

1. **J&L Drums and Pails are made from high quality J&L Steel Sheet.**
2. **J&L Drums and Pails are made with care and accuracy in every detail.**

You can obtain J&L Steel Drums and Pails through plants located in leading industrial centers. You'll find J&L service fast and efficient.

The J&L line includes all types of Closures and Finishes. Bright, colorful decorations may be reproduced to your specifications. Heavy-duty ICC Drums. Light-gauge Drums. 55, 30 and 15 gal. capacity and 100-lb. Grease Drums. Lightweight Drums for Chemical and Powdered Materials. 1-10 gal. capacity Steel Pails for Foods, Chemicals, Oils.

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STEEL CORPORATION — *Pittsburgh*
CONTAINER DIVISION

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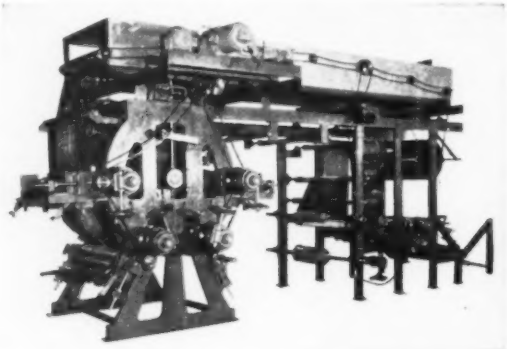
NEW flexographic LEMBO

4 color supported-web press

Supported-web construction permits *in-register* printing at *high speeds*, even with polyethylene and other extensible plastic films. All the strain of going through the rollers is taken up by the continuous blanket. The web is *carried*—not pulled—from impression cylinder to impression cylinder, assuring perfect printing at speeds from 0 to 500 feet per minute. Widths from 24″ to 60″.

- Choice of 360° planetary gear register control or electronic register control
- Impression cylinders taken out of contact with printing rollers by electric motors
- Optional unit dries ink between impressions for outstanding speed
- Can be equipped for gravure printing, and with rewinds for cellophane or paper



Full details and quotations on request

Ask about Lembo surface printing machines up to twelve colors.

LEMBO machine works, inc.
248 East 17th St., Paterson 4, N. J.
Manufacturers of Printing Presses and Cylinders

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A Complete Service

When you bring your engraved metal roller requirements to Raritan, you are placing your work in expert hands. Not only does Raritan do top-flight engraving, but we also know the characteristics of the equipment on which the rollers will be used. This serves as *double-insurance* of highest quality.

- Raritan Kwikool Embossing Rollers for embossing paper and vinyl film and sheeting
- Raritan Engraved Applicator Rollers for flexographic printers
- Raritan Coating Rollers for paper, film and foil
- Raritan Mill and Die Engravings on all metals, including steel, aluminum and copper

Raritan engraves rollers from laboratory size up to 32″ diameter x 12′ face. Prompt deliveries. Accurate workmanship.

Send inquiries to

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107-109 East 17th St., Paterson 4, N. J.
Division of Lembo Machine Works, Inc., Paterson, N. J.

Plants and people

Herb-Shelly, which will operate as a Brown & Bigelow subsidiary. Directors are: **G. F. Jacobs**, chairman; **Forrest Nutting**; **K. B. Priester**; **W. L. Heinrich**; and Mr. Schjeldahl. In addition to Herb-Shelly, Brown & Bigelow recently acquired **Western Lithograph Co.**; **Graphic Arts Engraving Co.**; **Quality Park Box Co.**; and **Consolidated Printing Ink Co.**

Edward H. Weitzen has joined **American Machine & Foundry Co.**, New York, as vice president in charge of marketing.

T. Perry

Wright Machinery Co., Durham, N. C., manufacturer of automatic packaging systems, has centralized responsibility for sales, installation and service with the sales department. **Troy Perry**, who has been promoted to the new position of service supervisor, will report to **Gordon Spicer**, assistant to **A. N. Wiley**, vice president and general sales manager.

George H. McGowan has been appointed general manager of the paper, purchases and traffic division of **Ball Bros. Co.**, Muncie, Ind. Mr. McGowan also continues to manage operations of the Ball corrugated box plant at Muncie, sales of corrugated mediums, paper procurement and packaging research.

Bemis Bro. Bag Co., St. Louis, Mo., has appointed **R. W. Lahey, Jr.**, as sales manager of the company's Norfolk plant and sales division.

William C. Goggin, manager of the plastics technical service of **The Dow Chemical Co.**, Midland, Mich., has received an honorary doctor of science degree from Alma College, Alma, Mich. Mr. Goggin directs the firm's laboratory facilities.

The Brockway Glass Co., Brockway, Pa., has elected **R. L. Warren, Jr.**, as vice president.

Aluminum, Ltd., Montreal, Canada, has completed extensions to the research facilities of its subsidiary company, **Aluminum Laboratories, Ltd.**, Banbury, England. The new wing of the Banbury research building more than doubles the size of the Banbury establishment.

Fulton Bag & Cotton Mills, Atlanta, Ga., has appointed **Lewis H. Merrill** assistant

manager of the company's New York office. **James A. Mundie** has been named sales supervisor at the company's New Orleans plant.

F. L. Wurzburg, Jr.

W. E. LeClair

Interchemical Corp., New York, has established a Product Application Engineering Dept., to be headed by **F. L. Wurzburg, Jr.** He will have **Willis E. LeClair** as his assistant and report to **Norman S. Cassel**, vice president for research and development. Mr. Wurzburg and Mr. LeClair have both been associated with Interchemical for about 20 years. The new department will deal with the inter-relationship of chemistry and mechanics in the application of the chemical coatings produced by Interchemical.

Bush Barnum has been named director of information of the **Glass Container Mfrs. Institute, Inc.**, New York.

Plans for a $900,000 expansion program at the Flint, Mich., plant of the **Ottawa River Paper Co.**, Toledo, Ohio, have been announced. Building additions and installation of new equipment are expected to more than double the firm's corrugated container production capacity.

Barricini Candies, Long Island City, N. Y., has appointed **Philip Masnick** as creative art director, in charge of window display and package design.

Eldon Mfg. Co., Los Angeles, has established a Research, Design and Development Div., headed by **Bernie Wolf.** The staff also includes **Bob Erhardt** and **Bill Rosenfield.**

E. Dale Wootton has been appointed vice president in charge of **P. L. Andrews Corp.**, New York, envelope and packaging firm.

Transparent Package Co., Chicago, manufacturer of cellulose and plastic films for meat and food products, has appointed **Thomas A. Best** to its sales force. Mr. Best will cover parts of Indiana, Kentucky, Ohio and West Virginia from headquarters in Cincinnati, Ohio.

Kennedy Car Liner & Bag Co., Inc., Shelbyville, Ind., is celebrating its 50th anniversary this year. The company was one of the first to promote industrial use of conforming bags in place of flat kraft wrapping paper and giant paper liners for railroad freight cars. Early in World War II the company developed a success-

partitions for protective packaging

WRITE, PHONE or WIRE
for QUOTATIONS on
YOUR REQUIREMENTS

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Manufacturers of Cardboard Partitions
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adhesive selector chart

...YOURS, free for the asking!

- ☐ CELLOPHANE
- ☐ FOIL
- ☐ PAPER
- ☐ FABRICS
- ☐ MYLAR
- ☐ POLYETHYLENE
- ☐ PLIOFILM
- ☐ VINYL FILM
- ☐ ACETATE
- ☐ SARAN FILM
- ☐ AND 16 MORE!

If your laminating problems involve the bonding of **any** films, **any** foils, **any** papers . . . to themselves or to each other . . . write, today, for this helpful "Adhesives Selector Chart" which lists recommendations for 26 different laminating materials . . . over 670 different single-laminate combinations . . . approximately 6,400 laminate/adhesive/laminate combinations . . . with their outstanding properties!

This comprehensive Chart is part of a deluxe, profusely illustrated brochure showing how BONDMASTER Adhesives have successfully solved such problems for other leading firms in **your own field.** Write for **your FREE copy today** — without cost or obligation.

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233 Belleville Avenue, Bloomfield, New Jersey

R/A SINCE 1915 INDUSTRIAL ADHESIVES

the price of a postage stamp
Ask for THILCOTUF if you, too, are interested in THILCO'S non-staining, elasticized blond laminated papers.
...buys all this "brand identification"
PERMALUX
ON A THILCO PRINT-DECORATED
PROTECTIVE PAPER!
Adding "salesmanship" to this upholstered sofa protective wrap cost the Chittenden and Eastman Company just 2.3¢ . . . powerful advertising value with brand identity at less than the cost of a first class stamp! Specifically, C & E's attractive, trademarked wrapper is a non-staining blond laminate, fibre reinforced paper for unusual strength — safer product protection. All, for an amazingly low unit cost.
WHAT ABOUT YOUR PRODUCTS?
Let Thilco Print-Decorated papers add selling power and protection to your wrappings. Available in a wide range of base papers and treatments up to 10' wide, Thilco grades meet packaging's most exacting requirements, whether for a spool of thread or a carload of machinery. What's your wrapping problem?
UP TO 10 FEET WIDE without lap or seam!
Thilco FUNCTIONAL papers:
ASPHALTED WATERPROOF BARRIERS, WAXED MOISTURE-VAPOR BARRIERS, GLASSINES and GREASEPROOFS, POLYETHYLENE TREATED PAPERS, SPECIALTY KRAFTS and SPECIALTY BAGS
Write for FREE Samples
THILCO
Functional Papers FOR PROTECTION THAT COUNTS!
NEW YORK • CHICAGO
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DETROIT • MINNEAPOLIS
THILMANY PULP & PAPER COMPANY
KAUKAUNA • WISCONSIN

Plants and people

ful moisture-barrier bag for military overseas shipments which stimulated the widespread use of desiccant packaging.

V. N. Winkler has been promoted to manager of the sales-order section at the Fredericksburg cellophane plant of **American Viscose Corp.**, Philadelphia, Pa. Mr. Winkler will replace **T. O. Williams,** who is being transferred to New York as manager of that district.

Harry D. Abbott has been named manager of sales research in the Sylvania Div. of American Viscose. Mr. Abbott, formerly manager of commodity research, will in his new post analyze marketing trends and developments affecting the packaging industry.

Pacific Coast Foil Co., Div. of Jorgenson & Co., San Francisco, printer and lithographer, has opened a new $1,000,000 foil converting and printing plant at 177 S. Airport Blvd., South San Fran-

cisco. The new plant, a one-story structure with 63,000 sq. ft. of floor space, has testing laboratory facilities for checking quality control and experimenting in package protection and appearance. The company's rotogravure presses can print as many as six colors in one operation and automatic die cutters can turn out 500 or 1,000 wrappers or labels at one operation.

Pacific Coast Foil has appointed **David F. Leary & Associates,** also of San Francisco, as merchandising consultants.

The Container Div. of **Atlas Plywood Corp.,** Boston, Mass., has appointed **Donald C. Jordan** as assistant sales manager, Western Div. Mr. Jordan, with Atlas for 10 years, will continue to work out of the Chicago office.

The Hartford City Paper Co., Hartford City, Ind., manufacturer of glassine and greaseproof papers, has appointed **Joe Piper** as agent in Mississippi, Alabama,

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of technical progress
in the packaging
and materials handling
fields

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National
Industrial
Packaging and
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Exposition

● Unique exhibit of products, equipment and materials

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● National Packaging and Materials Handling Competition

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SEPT. 28, 29, 30—1954

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SOCIETY OF INDUSTRIAL
PACKAGING and MATERIALS
HANDLING ENGINEERS
111 W. Jackson Blvd., Chicago 4, Ill.

Georgia, Florida and Memphis, Tenn. Mr. Piper will maintain headquarters in Bessemer, Ala.

L. C. Glancy

Stokes & Smith Co., subsidiary of **Food Machinery & Chemical Corp.**, Philadelphia, has appointed **Louis C. Glancy** as service representative for paperbox machinery and packaging machinery in the Chicago area and adjacent territory. Mr. Glancy, who has had a number of years experience with Stokes & Smith machines, will headquarter in Chicago.

East Texas Pulp & Paper Co., Evadale, Tex., has appointed **George A. Roschek** Eastern sales manager. Mr. Roschek will locate at the company's recently opened sales office in New York.

Robert Gair Co., Inc., New York, has appointed **Frank J. Sullivan** as division manager of its Ohio Corrugated Box Div., Cleveland, Ohio.

The American Tag Co., manufacturer of tags, labels and other paper specialties, has opened a number of new sales offices and appointed the following as representatives: **Howard S. Black** for San Francisco; **Howard Miller** for Atlanta, and the State of Georgia, and **George Kennedy** for Tampa, Fla., and the adjacent territory.

Cello-Foil Products, Inc., Battle Creek, Mich., has appointed **Jack Broomall** as sales representative in Western Michigan and the State of Indiana, with headquarters in Battle Creek.

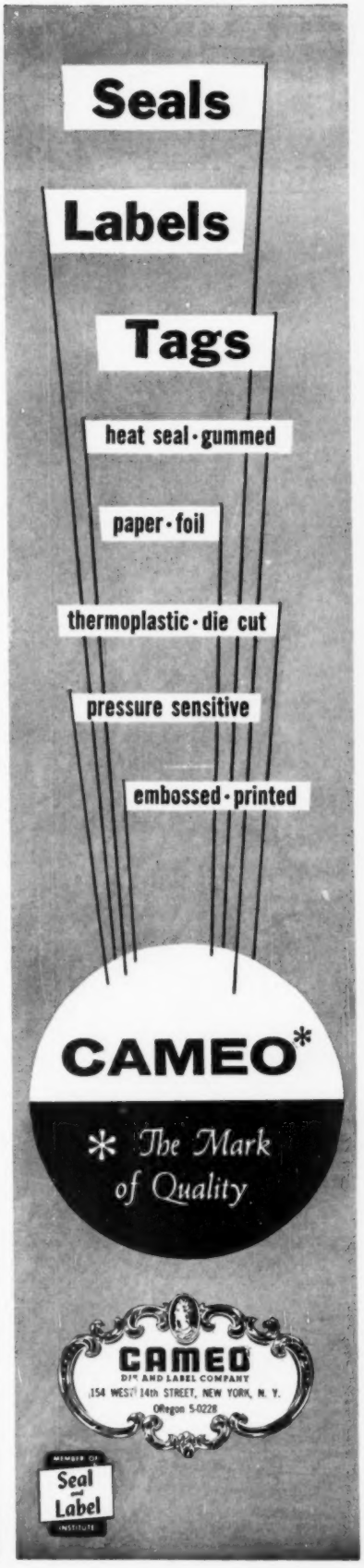
Matthew H. Bradley, Akron representative of **Hinde & Dauch Paper Co.**, Sandusky, Ohio, has retired after 35 years of service with the company.

C. Booth

Clint Booth has been appointed West Coast district sales manager of the **Bradley Container Corp.**, Maynard, Mass., manufacturer of polyethylene collapsible tubes and squeeze bottles. In addition, Mr. Booth will also service Texas and the Southwest.

Central States Paper & Bag Co., St. Louis, Mo., has appointed **Rod Hopkins** and **Frank Drexelius** as sales representative. Mr. Hopkins will cover Washington and Idaho, and Mr. Drexelius will cover the western part of New York.

Charles C. Rossotti has been elected chairman of the board of **Rossotti Lithograph Corp.**, North Bergen, N. J. Suc-



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A MODEL FOR EVERY PURPOSE . . .
A SPEED FOR EVERY NEED!

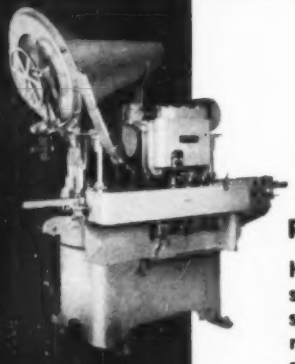
Capacity up to 60 per minute.

Tops them all

RESINA

Standard, single head, automatic screw capper.

Flexible Fast Fully Automatic

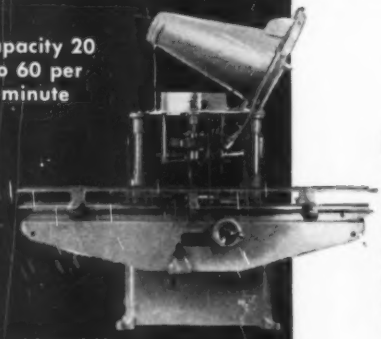


Tops them all

RESINA

High speed, straight line screw capper. Rated for speeds up to 300 per minute depending on size of container.

Capacity 20 to 60 per minute



Tops them all

RESINA

Automatic innerseal machine for selecting and applying standard innerseals to various types and sizes of tin cans as commonly used in the oil industry.

Other models available. Write for descriptive literature.

Agents in principal cities throughout the United States and Canada

RESINA AUTOMATIC MACHINERY CO., INC.
BROOKLYN 31, N. Y.

Plants and people

ceeding Mr. Rossotti as executive vice president is **Lucas D. Bella.**

Vulcan Steel Container Co., Birmingham, Ala., has announced plans for the construction of a large addition to its present building to increase its operating capacity by 30%.

C. R. Schmidt

Carl R. Schmidt, president of Schmidt Lithograph Co., San Francisco, has been elected president of the **Lithographers National Assn.** Mr. Schmidt is a veteran of 54 years in the lithographic industry and for 20 years has served as a member of the association's board of directors. He has been the association's vice president for the past two years.

Joseph R. Lawlor has been appointed manager of operations for Union Plastic Films division of **Transparent Package Co.** (Tee-Pak), Chicago, makers of cellulose and plastic casings for sausage and other food products. Mr. Lawlor formerly was with the H. P. Smith Paper Co.

Thomas J. Casey has been transferred from the New York office to the Chicago office of **Arthur Colton Co.,** manufacturer of pharmaceutical and filling machinery.

J. E. Brandenberger, 85, Swiss inventor of cellophane, died on July 13 in a Zurich hospital. Mr. Brandenberger, at the time of his death, was a director of the French firm, La Cellophane.

C. Dudley Armstrong, a director and former vice president and secretary of the **Armstrong Cork Co.,** Lancaster, Pa., died on June 8 after an illness of several months. He was 65 years old. Mr. Armstrong was the grandson of Thomas Morton Armstrong, founder and first president of the Armstrong Cork Co. In addition to his company duties, Mr. Armstrong was active in civic and social affairs.

Albert A. Morse, advertising manager of the **Peerless Roll Leaf Co., Inc.,** Union City, N. J., died June 10. Mr. Morse, who was widely known in the packaging, plastics and graphic-arts fields, had completed 25 years of service with Peerless Roll Leaf this year.

SHEFFIELD TUBES

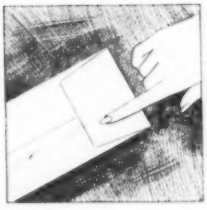
first choice of the famous J. R. WATKINS CO.

Man's war on insect pests is virtually eternal... but it's adios to mosquitoes and jiggers to chiggers when Watkins' effective insect-repellent takes over! *Sheffield Process* collapsible tubes have been Watkins' choice for plus packaging of this item as well as Watkins' Lather and Brushless Shaving Creams, and Watkins' Toothpaste. Sheffield's association with this famous American company began before the turn of the century and has extended through wars, depressions, and good times alike. It suggests the wisdom of procuring collapsible tubes from Sheffield, where service is not merely a slogan but is based on expert counsel, quick action, and detailed follow-through. For superior tubes and tube-manufacturing know-how from A to Z, try Sheffield Tube on *your* next order.

THE SHEFFIELD TUBE CORPORATION

Factory and Home Office: New London, Connecticut • Sales Offices: New York - Chicago - Los Angeles

SELF-SEAL envelopes help solve G.E. "family problem"!



G.E. cuts packaging time—puts 500 items in smart, look alike envelopes that seal at a touch

G-E's 500 different sized and shaped items created multiple packaging difficulties. The time-taking stapling operation needed to close old-style envelope wraps resulted in an unattractive appearance. It took a Self-Seal envelope with its unique closure, developed by the United States Envelope Company, to put all 500 items in their place. General Electric's new envelope is better looking, saves money and time; it seals at a touch, without moisture or special equipment.

Have you a Packaging Problem?
United States Envelope Company has designed many an unusual solution to a difficult packaging problem. Leading manufacturers in many different industries are using envelopes created to handle special jobs. U.S.E. would like to work with you if you have a "toughie" to solve. Please write, or use coupon.

UNITED STATES ENVELOPE COMPANY

General Offices, Springfield 2, Massachusetts

World's Largest Manufacturer of Envelopes
15 Plants from Coast to Coast

UNITED STATES ENVELOPE COMPANY
Dept. M-8, Springfield, Massachusetts

Please send samples and full details of your ideas for packaging our ..... (mention product)

NAME ..... TITLE .....

FIRM .....

ADDRESS .....

CITY ..... ZONE .... STATE .....

1. SELECT the items you want
2. CIRCLE the corresponding numbers on the post card
3. FILL IN the information requested
4. MAIL — no postage required

HELPFUL LITERATURE FREE

There is valuable data — worth dollars and cents to you — in the literature and samples described below.

EQUIPMENT • SUPPLIES • SERVICES

BARRIER MATERIALS. Catalog illustrates and describes the uses of the Dobeckmun line of government specification barrier papers. Includes samples of six different materials with data sheets listing tensile strength, elongation, bursting strength, and tear strength. The Dobeckmun Company. **(H-451)**

HEATED PROCESSING TANKS. Electrical and gas heated tanks for heating, melting and dipping plastics, waxes and similar compounds are discussed in a bulletin issued by Aeroil Products Co., Inc. **(H-452)**

GRAVITY CONVEYOR. Specifications, prices and charts of light-weight aluminum gravity conveyors are contained in bulletin that includes drawings and illustrations of this new model. Rapids-Standard Co., Inc. **(H-453)**

UNLOADER AND UNSCRAMBLER. Brochure on the ABC fully automatic, fully adjustable unloader and unscrambler for bottles received in re-shippable cases. Unloads up to 25 cases per minute, and unscrambles up to 600 bottles per minute. ABC Packaging Machine Corp. **(H-454)**

UNIVERSAL MARKER. Bulletin on the Algene Roller Printer which replaces stencils in the marking of packages, shipping cartons, drums, burlap bags, etc. Uses interchangeable rubber-type. Algene Marking Equipment Co. **(H-455)**

"VELVA-GLO 40." Price list and printed samples of this light-weight fluorescent paper for box covers, labels, gift wraps, and other packaging assignments. Radiant Color Co. **(H-456)**

BOTTLE AND CAN PACKERS. Brochure describes three basic machines for loading bottles and cans into shipping cases. Lists such advantages as fully automatic feed and discharge, rapid size adjustment, economical operation. Standard-Knapp, Div. of Emhart Mfg. Co. **(H-457)**

NAILED-WOOD BOXES. Informative outline covers procedure for ordering nailed-wood boxes for shipping, and contains illustrations of styles and nailing patterns, list of wood groups, nail charts, and a glossary of useful "box terms." The American Box Co. **(H-458)**

ADJUSTABLE CORRUGATED CARTON MACHINE. Details about the economies and advantages of the "Rit-Size" box machine for manufacturing a wide range of different size corrugated cartons with minimum set-up time and expense. Colt's Mfg. Co. **(H-459)**

PNEUMATIC FILLERS. Bulletin illustrates and describes six different Pneumatic filling machines using the vacuum filling principle. Gives schematics and operating specifications of each of these fillers for use on wide mouth finish, standard regular finish and sprinkler top bottles and jars. Pneumatic Scale Corp. **(H-460)**

WRAPPING AND BUNDLING. Methods of operation of a dual purpose rotary bundling machine which wraps and seals groups of cartoned commodities automatically in any type of coated paper, heat sealing cellulose film, or glassine. Ayers & Grimshaw, Ltd. **(H-461)**

RESINPROOF COATING FOR GLUE POTS. Leaflet describes a clear solvent dispersion for use in applying an anti-adhesive coating to glue pots and other machine parts. Federal Adhesives Corporation. **(H-462)**

MATERIALS HANDLING EQUIPMENT. Catalog on "Big Joe" hydraulic lift trucks. Lists fourteen automatic and manually operated hydraulic lifts, their dimensions and capacities. Albert H. Cayne Equipment Corp. **(H-463)**

BEMIS "QUANTACOLOR" BAGS. Booklet describes the "Quantacolor" method for selecting the most suitable combination of colors for a package, and its relationship to Bemis service. Bemis Bros. Bag Co. **(H-464)**

PACKAGING MANUAL FOR SELF SERVICE MEATS. Brochure extensively covers major aspects of pre-packaging meats and poultry for self-service selling. Includes step-by-step illustrations for specific cuts, data on labeling, efficient packaging procedure, and department layout. The Goodyear Tire & Rubber Co. **(H-465)**

CONTAINER MOLDING EQUIPMENT. Bulletin on a new line of injection presses for use in molding plastics for packaging. Includes specifications on ten models with capacities ranging from 6 ounces to 400 ounces. The Hydraulic Press Mfg. Co. **(H-466)**

"NICOLMELT" COATINGS. Leaflet covers the applications of "Nicolmelt" hot melts for bread wrappers, folding cartons, labels and other packages. It also describes the economies of "Nicolmelt" and lists their properties. Boler Petroleum Co. **(H-467)**

STRETCHABLE PROTECTIVE PACKAGING MATERIALS. Brochure describes a wide range of packaging uses for two Kraft products — "Corrucrepe," creped and corrugated for stretch in every direction, and "Elastikraft" deep-crinkle creped for flexible utility protection. May be used as interleaving, cushioning, barrel liners, etc. Cincinnati Industries, Inc. **(H-468)**

"WHAT ADHESIVES USERS SHOULD KNOW. Modern Packaging reprint trouble-shoots common adhesives problems. Emphasizes the points an adhesives user should look for in making his selection. The Union Paste Company. **(H-469)**

FLOCK. Booklet discusses the manufacture of flock made of fiber materials, application methods used, and suitable adhesives. Lists application equipment made by various manufacturers. Claremont Waste Mfg. Co. **(H-470)**

PNEUMATIC VIBRATORS. Catalog features a line of pneumatically-operated bin and hopper vibrators and vibrating tables for assuring positive filling in many packaging operations. The Cleveland Vibrator Company. **(H-471)**

COUNTING AND IMPRINTING MACHINE. Twelve case histories show how the Pitney-Bowes "Tickometer" saves time, money and effort in marking, coding, dating and related operations. Pitney-Bowes, Inc. **(H-472)**

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EQUIPMENT • SUPPLIES • SERVICES

BELT CONVEYOR. Folder gives data on Conveyor Specialty's "Unitable," a self-powered portable belt conveyor for assembly-line inspection and packaging. Conveyor Specialty Co., Inc. (H-473)

"TEFLON" FINISHES. Technical bulletin on "Teflon" polytetrafluoroethylene resin finishes having many potential packaging and packaging machinery applications due to their unusual anti-sticking properties, high heat stability, low coefficient of friction, and excellent corrosion resistance. Finishes Div., E. I. du Pont de Nemours & Co. (H-474)

COATED PLASTICS FINISHES. Brochure contains nine decorative samples plus descriptions of coated plastic sheet materials, including metallized, opaque, transparent, and printed cellulose acetate, metallized polystyrene, embossed metallized acetate and polystyrene. Coating Products. (H-475)

GLUE DISPENSER FOR MAKING WATERPROOF CASE LINERS. Data on the use and operation of the "Fibro" hand glue dispenser for making waterproof case liners with light or heavy Specification JAN-P-140 waterproof glue. Fibleco-Illinois Corp. (H-476)

SPECIALITY BAG SAMPLES. Portfolio of numerous paper and plastic bag samples printed in one, two and three colors by aniline or rotogravure, and applicable for use with a multitude of products. Oneida Paper Products, Inc (H-477)

AUTOMATIC NECK BAND SEALING MACHINE. Data on a unit which automatically applies pre-cut cellulose bands to flat and round half-pint, fiifth, and quart size bottles at speeds from 50 to 165 per minute. Gisholt Machine Co. (H-478)

ELECTRIC ADHESIVE MELTERS. Data on the capacities and specifications of equipment for heating and dispensing adhesives. Includes information on a synthetic adhesive melter, a natural glue melter and electric glue pots. Sta-Warm Electric Company. (H-479)

TAMPER-PROOFING SCREW CLOSURES. Folder with numerous application photos showing how "Filma-Seal" closures and regular screw caps are used to protect various products from leakage, evaporation, air and moisture exchange, and tampering. Ferdinand Gutmann & Company (H-480)

EXTRUDED POLYETHYLENE TUBING AND SHEETING. Booklet gives detailed information on the production of "Cheslene" polyethylene, its water impermeability, flexibility, heat sealability, non-toxicity, and other features. Nine tables on the stability of "Cheslene" in relation to solvents, and industrial and household chemicals. Chester Packaging Products Corp. (H-481)

AUTOMATIC PACKAGING MACHINERY. The complete line of Hesser machinery, including automatic packers for powders and granular flakes, filling and closing machines, weighers, and wrappers, is described in a brochure issued by Fr. Hesser Maschinenfabrik. (H-482)

VELOUR FLOCKING. Velour-flocked folder lists applications for the four grades of Nashua velour stock. Data on colors, sizes and weights available. Nashua Corp. (H-483)

LABEL CUTTER. Brochure discusses the "Strong" semi-automatic label cutter designed to die cut labels and similar products directly from plain or printed sheets. Hobbs Mfg. Co. (H-484)

HY-TRA-LEC WEIGHING AND FILLING SYSTEMS. Several bulletins on Wright's new automatic cartoning machines which form, weigh, fill and close cartons. Discusses "Model M" semi-automatic and automatic filler, which has a weight range of ⅛ ounce to 16 ounces and filling speeds from 25 to 70 per minute. Wright Machinery Co. (H-485)

PACKAGE WRAPPING MACHINES. Brochure illustrates twenty-one different high-speed "Campbell" package wrappers for baked goods, candy bars, paper products, ice cream pops, hard goods and sundries. Hudson-Sharp Machine Co. (H-486)

PACKAGING MACHINES. Specifications of thirty-nine "MFM" semi and fully automatic machines for performing a wide range of functions including tube filling and closing, tablet, packaging, cartoning, cellophane wrapping, powder filling, counting, unit packaging, and bag filling. Industrie-Werke Karlsruhe. (H-487)

"FORMVAC." Bulletin explains the operation of the new "Form Vac Robot" for vacuum forming rigid and soft thermoplastic sheet materials into complete packages, trays, displays and other items of interest to packers. Specifications included. Hydro-Chemie, Ltd. (H-488)

ROTARY PISTON FILLERS. Catalog gives information on the operation of four piston fillers for packaging viscous or semi-solid products into jars and cans. Gives specifications and dimensions of each machine. The Pfaudler Co. (H-489)

RADIANT HEAT PLANELS. Data on "Chromalox" far-infra red radiant heat panels for speeding the drying of inks, glue, paper varnishes, and silk-screening. Edwin L. Wiegand Co. (H-490)

SLITTING MACHINE. Bulletin covers the features and operation of the Dusenbery "Model 635 AB" shear cut and razor blade slitter, for accurately slitting film, tape, foil and paper to a minimum width of ¼". John Dusenbery Co., Inc. (H-491)

ROTOGRAVURE PRINTING. New manual contains detailed information on all phases of rotogravure printing with Champlain presses. Data includes roll-fed press operations, gravure printing unit, roll fed press delivery and related items. Champlain Co. (H-492)

INDUSTRIAL ROLLS. Booklet describes the applications and manufacturing operation of a number of "Pamarco" rolls. Included is information on flexographic and gravure rolls, ink transfer and applicator rolls, embossing rolls. Paper Machine and Research, Inc. (H-493)

"DATAMATIC" WEIGHT CALCULATOR. Information on a computer which automatically graphs the "unders" and "overs" after check-weighing to give the user a picture of weights and averages of a packaging line. Scale Specialties and Systems. (H-494)

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MODERN PACKAGING

575 Madison Avenue

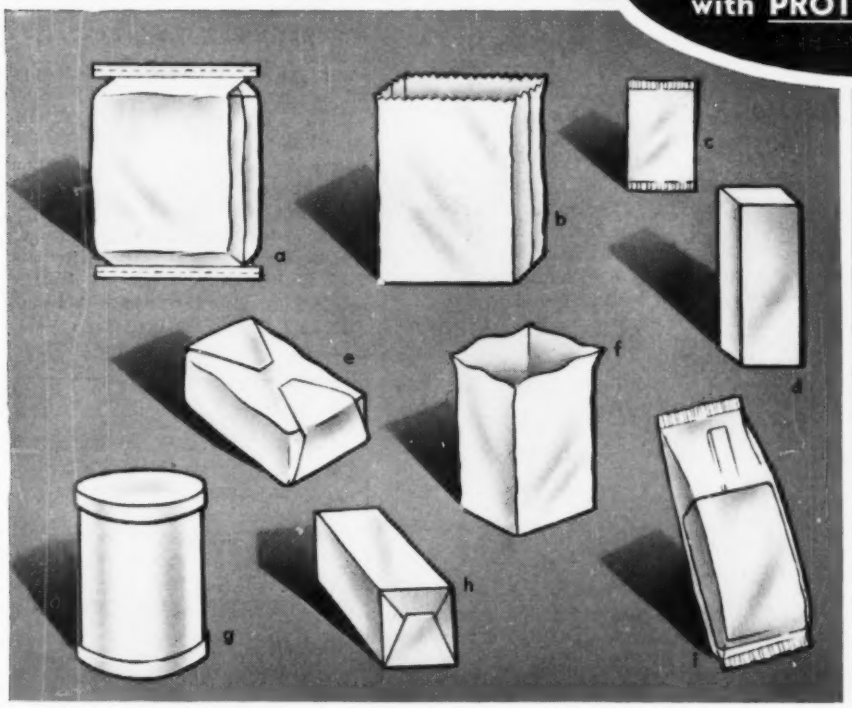
New York 22, N. Y.

EXPERT analysis of your package! No obligation.

PROTECTION-PLUS

M-J gives packages a safety margin of polyethylene coating for PROTECTION-PLUS. No weak spots. No dangerously low areas. You get PROTECTION-PLUS against package failure, product spoilage.

M-J POLYETHYLENE LAMINATED PAPERS with PROTECTION-PLUS



M-J Polyethylene Laminated Paper offers you these advantages:

- Protection against gain or loss of moisture.
- No taste, odor or toxicity.
- Low package cost.
- Economy of shipping and storage.
- Ease and speed of packaging.
- High resistance to puncture and tearing.
- High melting point — no fusing with contents.
- No embrittlement or flaking of coating at low temperatures.
- Tough, flexible at low temperatures.
- Lightweight and acid resistant.
- Improved appearance of package.
- Strong, permanent seal.

Do you use any of these types of packages? (a) Multi-wall bag; (b) single-ply bag; (c) pouch bag; (d) carton; (e) frozen food lockerwrap; (f) innerwrap or case-liner; (g) fiber drum; (h) chip-board container or tray; (i) over-wrap.

If you use any of the packages pictured above, you can get all the advantages of M-J Polyethylene Laminated Paper . . . by sending in the coupon.

And M-J Polyethylene Laminated Paper may enable you to replace bulky, heavy and expensive containers, eliminate return shipping costs, lower tare weights and reduce or entirely eliminate spoilage.

So, send us your package. Our technical experts will be glad to analyze your package and honestly tell you whether M-J can improve it.

Why wait? Clip and mail the coupon today!

McLAURIN-JONES COMPANY
HEADQUARTERS: BROOKFIELD, MASSACHUSETTS
Offices: New York, Chicago, Cincinnati, Los Angeles
Mills: Brookfield and Ware Mass., Homer, La.

McLAURIN-JONES COMPANY
Dept. A-8, Brookfield, Mass.

☐ We are sending a package we would like to have you analyze.

☐ Please send us free samples and more information on M-J Polyethylene Laminated Papers with PROTECTION-PLUS.

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McLAURIN-JONES PAPERS

For your information

Interest shown in the **1954 National Packaging & Materials Handling Competition** indicates that management in all industries is concentrating on costs involved in packaging and materials-handling operations, according to the **Society of Industrial Packaging and Materials Handling Engineers,** sponsor of the competition. The event is being conducted in conjunction with the **9th Annual National Industrial Packaging & Materials Handling Exposition,** to be held in the Chicago Coliseum, Sept. 28-30. This year's competition follows the pattern of previous competitions, although there are several changes in award donorship. New award donors include ***Packaging Parade*** and the Packaging Committee of the **Maritime Assn. of the Port of New York.** Beginning this year, the **Harold Jackson Trophy** will be awarded for the best interior packaging application and the **Irving J. Stoller Award** will be elevated to the "best-of-show" level. Award winners will be announced at the Society's annual dinner on Sept. 29.

SIPMHE has accepted sponsorship of a project on "Pallet Standardization" at the invitation of the **American Standards Assn.** Administrative co-sponsorship has been accepted by the **American Society of Mechanical Engineers.** Scope of the project, as recommended by interested industry representatives at a recent meeting in New York, is "Standardization of nomenclature, materials, sizes and components of pallets, including sampling, inspection and test procedures."

The 1954 Canners Directory, compiled and published by the **National Canners Assn.,** is now available. This 46th annual compilation consists of 254 pages, bound in stiff linen covers. Canning firms, their headquarters, plant locations and products packed are listed by states. The book, which is widely used as a reference work, features an over-all commodity index covering 533 different canned products. Member firms of NCA are furnished a free copy and additional copies to members are priced at $1 each; otherwise the Directory sells for $2.50. Address orders to the Information Division, National Canners Assn., 1133 Twentieth St., NW., Washington 6, D. C.

Eight helpful suggestions are presented in a new loose-leaf booklet titled "**Tips for the New Buyer of Folding Paper Boxes,**" recently published by the **Edwin J. Schoettle Co.** Copies are available on request to the company at 533 N. Eleventh St., Philadelphia 23.

The Division of Adult Education at **Purdue University** has announced next season's starting dates for the **Purdue Institute for Packaging Personnel:** Sept. 27 and Oct. 25, 1954, and Jan. 10, Feb. 14 and April 18, 1955. Two 2-week sessions are scheduled for each class in order that personnel will be away from the job only two weeks at a time. Classes are also scheduled for those who wish four consecutive weeks of training. The course covers technical topics, economic considerations, professional training and special activities. Visiting instructors are packaging men from various industrial and business organizations throughout the country. For advanced registration, write to The Comptrollers Office, Conferences, Purdue University, Lafayette, Ind., indicating the class in which you are interested. Fee for two 2-week sessions or for the four-week session is $150. For additional information, write **Mart I. Fowler,** Division of Adult Education at Purdue.

The Package Designers Council sponsored an exhibit of newly designed packages at the recent convention of the **U. S. Trade-Mark Assn.** The exhibit illustrated the packaging of a variety of products, showing how trademarks have been revised or modified for greater distinction and more rapid brand identification.

The Point-of-Purchase Advertising Institute has appointed **Paul Godell** of Arvey Corp., Western vice president of POPAI, as chairman of POPAI's **9th Annual Symposium and Exhibit** to be held at the Palmer House, Chicago, April 5-7, 1955. It is predicted that the 1955 show will exceed this year's, which had a 15,000 attendance figure with more than 100 exhibitors.

POPAI has announced its opposition to Senate Bill 3294 (Langer Bill), which would prohibit transportation of advertisements in interstate commerce in all media for distillers, brewers and vintners. The bill would affect displays and other dealer and consumer material. POPAI contends that any product which can be manufactured and legally sold should not be burdened with discriminatory limits on its advertising and sales promotion.

A new type of packaging seminar was held recently at the **Packaging Service Co.,** a package testing laboratory in Wyncote, Pa., a Philadelphia suburb. Conducted jointly with the **Pennsylvania Box & Lumber Co.,** the seminar was an educational session designed to give representatives of local industries ideas regarding reduction of costs in their packaging and materials-handling operations. A series of demonstrations of shipping containers for a variety of industrial manufacturers was presented. There were also demonstrations of how faulty product design resulting in damage claims could be eliminated.

Visitors to Washington are invited by **E. N. Funkhouser,** president of the **Canning Machinery & Supplies Assn.,** to visit the association's new, permanent headquarters, recently opened at 4630 Montgomery St., Suite 2, Washington 14, D. C.

Firms specializing in the manufacture of all forms of packaging for soft drinks will be well represented at the **1954 International Soft Drink Industry Exposition,** to be held Nov. 15-18, Convention Hall, Philadelphia. Packaging manufacturers who have already made arrangements to exhibit at the show include: **Anchor Hocking Glass Corp., Armstrong Cork Co., Brockway Glass Co., Chattanooga Glass Co., Continental Can Co., Glenshaw Glass Co., Inc., Knox Glass Co., Laurens Glass Works, Inc., Liberty**

What's doing

Aug. 17-19—**Fifth Western Packaging & Materials Handling Exposition,** Civic Auditorium, San Francisco.

Aug. 22-27—**American Pharmaceutical Assn.,** Statler Hotel, Boston.

Aug. 22-27—**New York Gift Show,** Hotels Statler and New Yorker, New York.

Aug. 22-27—**Second U. S. International Gift and Fancy Goods Show,** Astor Hotel, New York.

Sept. 9-11—**National Paper Trade Assn.,** Fall Meeting, Conrad Hilton Hotel, Chicago.

Sept. 11-14—**Packaging Machinery Mfrs. Institute,** 22nd Annual Meeting, Grove Park Inn, Asheville, N. C.

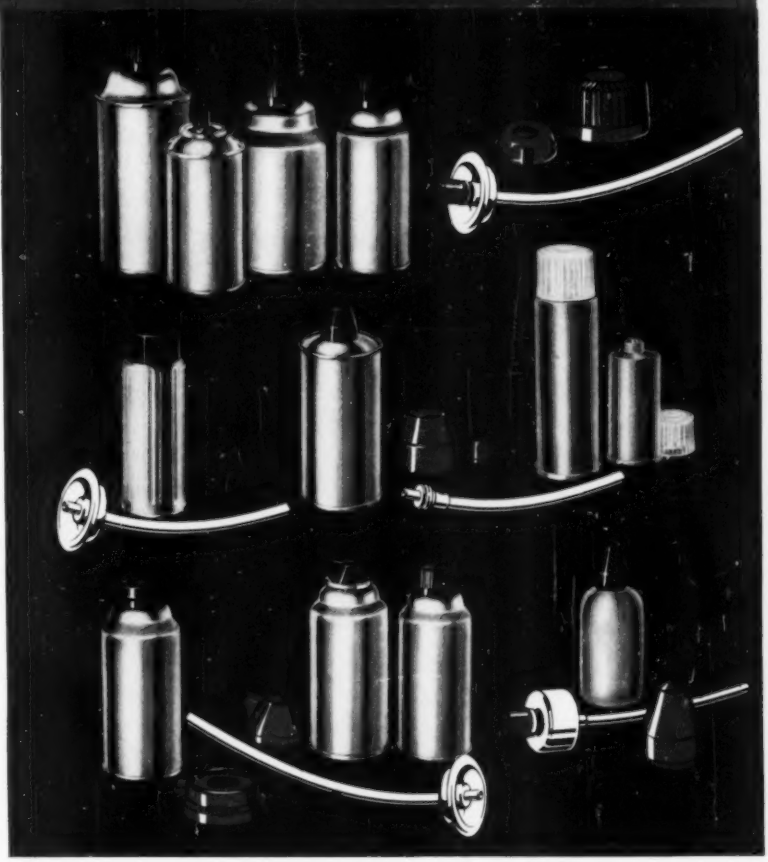
Sept. 12-15—**Confectionery Caravan Show,** Palmer House, Chicago.

Sept. 23-24—**National Flexible Packaging Assn.,** Fall Meeting, Moraine-on-the-Lake, Highland Park, Ill.

Sept. 26-30—**Masters Brewers Assn., of America,** Waldorf Astoria, New York.

Sept. 28-30—**Ninth Annual Industrial Packaging & Materials Handling Exposition, Competition & Short Course,** Coliseum, Chicago.

THE *Aerosol Valve* FOR YOUR PRODUCT *by Precision*



● So widespread has been the public acceptance and demand for self-dispensing packages equipped with colorful Precision valves, that new type products and additional brands are added daily to the long list enjoying the plus values offered by Precision. To keep pace with this tremendous growth, Precision's production and research are continually expanding both here and abroad so that your package may have the merchandising and technical advantages of a Precision valve regardless of the product, container or filling method involved.

Why is Precision the Leader?

DESIGN . . . The wide range of Precision valves featuring positive, fingertip operation assures a successful solution to your specific spray characteristic requirements.

CONTAINER . . . Precision has a valve engineered for the aerosol container of your choice plus the widest selection of plastic colors to enhance the beauty of your package.

PRODUCTS . . . Plastic construction eliminates corrosion enabling Precision valves to perform efficiently for all products whether foam, residual or true aerosol.

FILLING METHOD . . . All types of aerosol products with Precision valves, are being filled successfully by pressure as well as refrigeration at the lowest cost.

QUALITY . . . Precision's basic research, production skill, development techniques and 100% inspection of over 100,000,000 time-tested valves is your assurance of high quality.

ECONOMY . . . The highest plant production efficiency, as well as the lowest rejection rates for filled containers, assures maximum economy with Precision valves.

AVAILABILITY . . . The world's largest aerosol valve manufacturing facilities, are combined with the latest production methods and techniques, to give production schedules that assure prompt deliveries.

● *We invite your inquiry to enable our staff of aerosol valve technicians to work cooperatively in satisfying your valve requirements.*

PRECISION

Precision Valve Corporation

700 NEPPERHAN AVENUE • YONKERS 3, NEW YORK

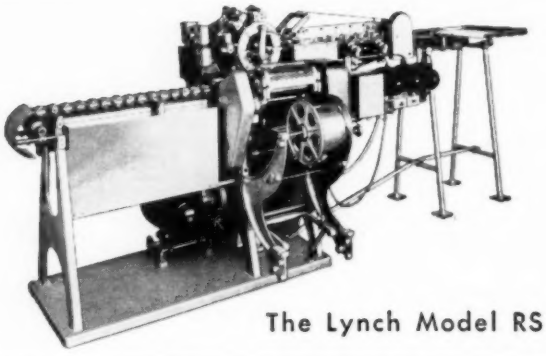
the standard for engineering precision

up to 100 multiple-unit packages per minute

The higher speeds attained by the Model RS, with lowered scrap loss, provide greater economy in attractively wrapping round or square cookie and cracker sandwiches . . . up to 100 multiple-unit packages per minute! The Model RS can speed production, save money in your plant.

Write to Dept. M for full details

Lynch Packaging Machines are manufactured by the most rigid engineering standards in industry. They assure careful selection of materials, absolute quality control of workmanship and thorough inspection in all phases of production. They demand economical interchange of parts. The results are rugged construction, day-by-day dependability.



The Lynch Model RS

ANDERSON, INDIANA

LYNCH CORPORATION

PACKAGING MACHINES

Branches: New York • Toledo • Chicago • San Francisco • Los Angeles Atlanta • Dallas • Toronto—Export Dept.: 13 East 40th St., New York 16, N. Y. Cables: ARLAB

for results...

call on "classified"

FOR HELP WANTED
TO BUY OR SELL USED EQUIPMENT
TO FIND A JOB
TO DISPOSE OF SURPLUS STOCKS
FOR ESTABLISHING BUSINESS CONNECTIONS

Time and again, individuals and companies in the packaging field have found solutions to their difficulties by advertising in the Classified Advertising section of MODERN PACKAGING. Here, the buyer and the seller have a chance to meet, the prospective employer and the prospective employee get an opportunity to look each other over, the manufacturer can shed his surplus materials or buy up someone else's.

Rates are most reasonable. It costs but a few dollars to put your message before the entire "packaging-minded" audience of MODERN PACKAGING. Just refer to CLASSIFIED ADVERTISEMENTS in the latter part of this magazine for rates. Then . . . call on "classified."

ABP ABC

MODERN PACKAGING

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For your information

Glass Co., Obear-Nester Glass Co., Owens-Illinois Glass Co., Thatcher Glass Mfg. Co., Inc., American Coating Mills Corp., Atlanta Paper Co., River Raisin Paper Co., Gideon-Anderson Lumber Co., Woodstock Mfg. Co., J. L. Clark Mfg. Co., Empire Box Corp. and **Morris Paper Mills.**

W. R. Gardiner has been appointed director and treasurer of the **Paper Bag Institute, Inc.,** to succeed the late **J. A. C. Kavanagh.** Mr. Gardiner formerly was assistant to Mr. Kavanagh.

Plastics packagers will be interested in the newly published guide book titled "**Manual for Plastic Welding, Vol. II, Polyethylene**" by **G. Haim** and **J. A. Neumann** (The Industrial Publishing Co., 1240 Ontario St., Cleveland 13, Ohio; $6). The manual is designed as an aid to practical welders and engineers.

The U. S. Dept. of Justice has appealed the decision handed down by **Judge Paul Leahy** last December, in which he held that **E. I. du Pont de Nemours & Co., Inc.,** did not possess a monopoly of cellophane. Such appeals by the Government go directly to the **U. S. Supreme Court** for hearing and decision, and it is likely that a year or more may elapse before decision by the Supreme Court.

The importance of packaging in today's economy was the subject of a talk by **A. D. Hoeppner** of Bemis Bro. Bag. Co. at a recent distribution and sales clinic sponsored by the **National Assn. of Manufacturers.** Mr. Hoeppner headed a panel of business executives who reviewed sales promotion, advertising, product packaging, sales management, market research and credit as they influence business today.

The Department of Defense has announced the publication of **Military Specification MIL-C-17435A,** a fully coordinated specification covering resin-bonded, fibrous glass cushioning material, which supersedes MIL-C-17435 (Bu. Ord.).

Twenty-eight representatives of industry and Government attended the recent 9th annual meeting of the **Forest Products Packaging Council,** an organization of packaging specialists who worked on military research at the **U. S. Forest Products Laboratory** during World War II. Speakers included **R. P. Carry** of General Motors Corp., who described a

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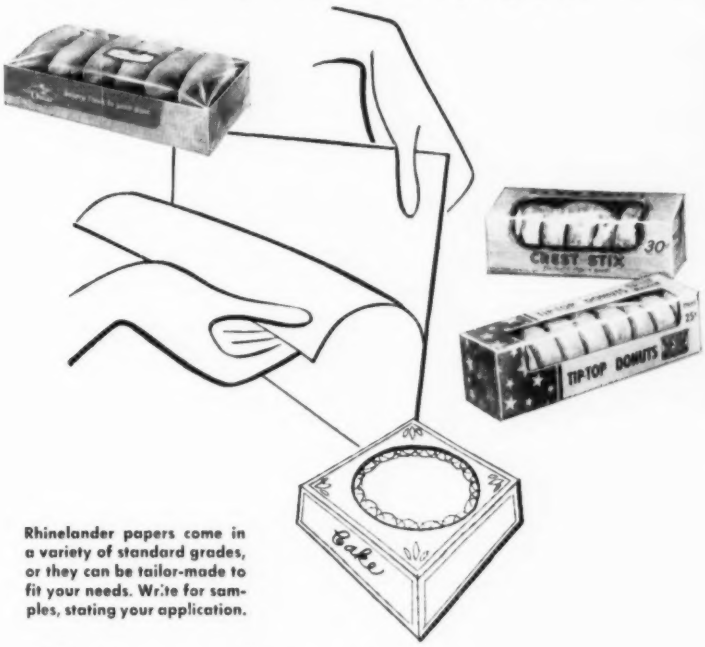

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plain, waxed, wax laminated, or coated, are used for inner and outer product wraps • product bags and envelopes • insert labels • for laminating to other packaging materials like foil, boxboard and films • packaging accessories, and scores of other applications in the food packaging industry where greaseproof qualities are essential.

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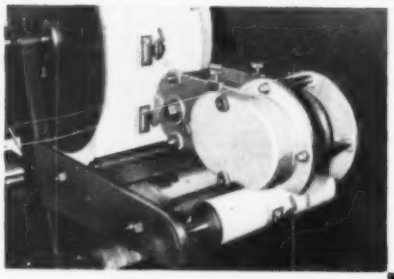

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national program for safe transit, and **H. T. Holbrook** of Standard Packaging Corp., who spoke on vacuum packaging of foodstuffs for self service. Three members of the Forest Products Laboratory reporting on that group's recent research were **K. Q. Kellicutt,** who described a new method for drop testing fibreboard containers; **J. P. Hohf,** who reported on volatile corrosion preventives; and **C. A. Jordan,** who told of the development of standard tests and packaging requirements for parcel post shipments.

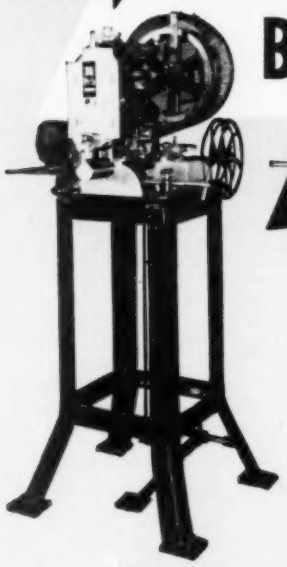
More than a quarter of a million persons have viewed the documentary film titled "**Paperboard Packaging,**" covering the manufacture of paperboard and folding cartons, according to the **Continental Paper Co.,** producer of the film. It shows in color and sound scenes from Continental's own board mill and one of its folding carton subsidiaries, **Alford Cartons.** Running time is 30 minutes, during which time the film takes the viewer through the entire process—from the hydro-pulper to the carton filling machines. The film is available on request to Continental Paper Co.'s Public Relations Dept., Ridgefield Park, N. J.

Definitions of 45,000 business and legal terms are contained in a newly published book titled "**The Dictionary of Business and Industry**" (B. C. Forbes & Sons Publishing Co., Inc., 80 Fifth Ave., New York 11; $7.95, with thumb index $8.95). Edited by **Robert J. Schwartz,** a practicing attorney, the book also contains 36 pages of charts and tables. The dictionary is useful in standardizing business terminology.

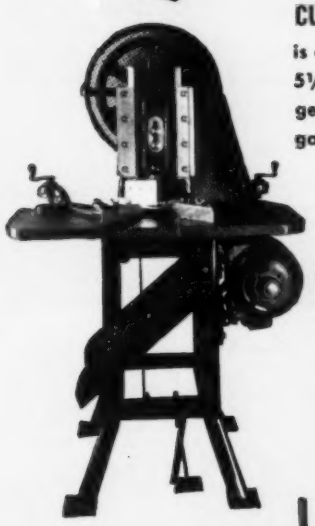
The recently proposed Simplified Practice Recommendation for Retail Container Sizes (Net Weight) for Frozen Fruits and Vegetables has been approved by industry and is now in effect, according to the **Commodity Standards Division, U. S. Dept. of Commerce.** The recommendation, identified as Simplified Practice Recommendation R253-54, Retail Container Sizes (Net Weight) for Frozen Fruits and Vegetables, is based on a survey of industry practices. The recommendation does not include the shape or dimensions of containers or specifications for the material of which they are made, but is limited to the net weight of a selected list of 19 fruits and vegetables. Mimeographed copies of the recommendation may be obtained from the Commodity Standards Div., Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C.

SET-UP BOX

Plant Cost Records Verify Economy of Knowlton Machines



NO. 5 STAYER
will handle boxes from 3/8" to 4½" depth, applying stay tape up to 1" maximum width.



SINGLE CORNER CUTTER
is equipped with 5½" knives and gear-adjustable gauges.

In Set-Up Box plants where costs are minutely checked, these three Knowlton machines are noted for their economy of output and operation.

Higher quality boxes on an increased scale are produced by the Automatic Flange Bender. It pays for itself in labor saved because it replaces hand bending. It processes as much work in one hour as hand operations can turn out in several hours.

The Single Corner Cutter is designed to stand up under continual usage. Product waste is minor whether the cutting demand is light or heavy, deep or shallow. Work can be turned out fast, accurate and uniform.

Knowlton's No. 5 Stayer also tops the field for reliability and quality.

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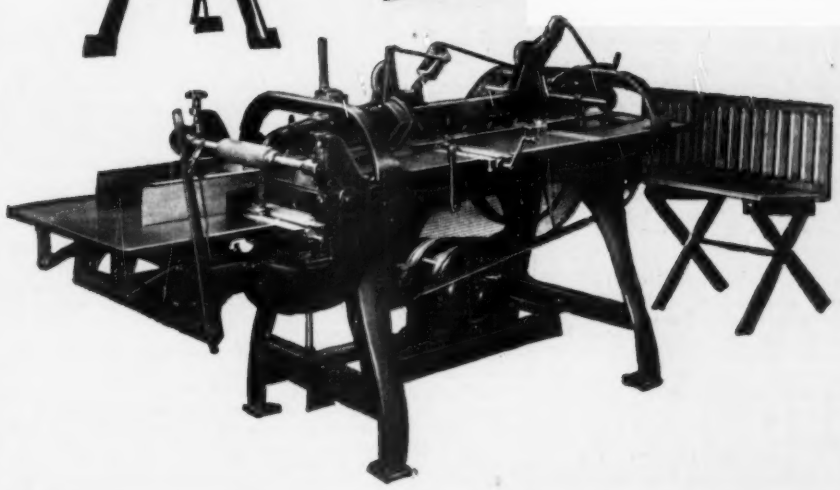


FLANGE BENDER
is simple to operate. Only tool needed to make adjustment is hand crank furnished with machine.

U. S. patents digest

This digest includes each month the more important patents of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at 25 cents each in currency, money order or certified check;postage stamps not accepted. Edited by H. A. Levey

Device for Setting Up Collapsible Cardboard Cartons, J. K. Eaton (to Bloomer Bros. Co., Newark, N.Y.). U.S. 2,678,590, May 18. A device for erecting collapsible cardboard cartons having portions thereof collapsed into substantial engagement with each other, device comprising guideways for the collapsed carton and means for moving carton along said guideways.

Machine for the Manufacture of Rectangular Containers, W. M. Fleming and M. Klein (to Eskimo Pie Corp., Bloomfield, N.J.). U.S. 2,678,591, May 18. A machine for making three-piece rectangular containers, said pieces being adhesively secured, comprising a movable carrier having a plurality of spaced-apart vertically disposed frame members thereon, with reciprocating plunger adapted to insert an expanded container-body member into a frame member.

Shipping Container, K. C. Ferguson and N. F. Schaefer (to Anderson Box Co., Indianapolis, Ind.). U.S. 2,678,765, May 18. A shipping container having a bottom and inwardly and upwardly disposed side and end walls, each of said walls having cover-supporting corner portions rising therefrom with the upper edges of walls intermediate said portions disposed below the upper edges of said corner portions, a cover resting at its corners only upon the said corner portions to span the lengths of said walls.

Carton for Like Articles, P. A. Toensmeier (to The Bartgis Bros. Co., Ilchester, Md.). U.S. 2,678,767, May 18. A carton for holding a row of cans, which comprises a sleeve open at its ends and made up of a pair of side walls, a connecting top wall and a connecting bottom wall, a retaining flap attached to at least one connecting wall near one end thereof, the flap being integral at its root with said wall and extending inward from its root toward the center of said wall and having a holding flap attached to the same wall as the retaining flap.

Reinforced Bag, R. W. Vergobbi (to Pneumatic Scale Corp., Ltd., Quincy, Mass.). U.S. 2,678,768, May 18. A reinforced bag comprising a bag of flexible, transparent material and a reinforcing structure within the bottom portion of the bag, said reinforcing structure comprising a bottom panel disposed within the bag and composed of a material substantially stiffer than the bag material and being adhesively secured to the bottom of the bag.

Packaging Device, J. H. Bonini (to Marathon Corp., Rothschild, Wis.). U.S. 2,678,770, May 18. A paperboard blank for forming a collapsible packaging device, the blank being suitably cut and scored to provide a main panel, a pair of opposed side panels each along one side edge hingedly connected to a side edge of the main panel.

Thermosealable Package, J. F. Ehrenfried and J. A. Triche, Jr. (to The Goodyear Tire & Rubber Co. a corporation of Ohio.). U.S. 2,679,194, May 18. A method of preparing containers from heat-sealable material comprising preparing a package by stacking together a plurality of superposed container blank units, each of said units including two sheets of rubber hydrochloride and each of said container-blank units being separated from each other by substantially heat-stable paper slip sheets, wrapping the stacked units with a heat-stable wrapper to maintain the superposed parallel edges of the stacked units substantially aligned in a plane perpendicular to the top and bottom planes of the stack.

Apparatus for Forming Tubular Articles, G. G. Whytlaw (to American Viscose Corp., Wilmington, Del.). U.S. 2,679,195, May 25. Apparatus for producing a tubular element from a flexible sheet comprising means for drawing the sheet continuously through a path, means along the path for slitting the sheet, guide means along the path for forming the sheet into tubular shape and arranged to lap one edge of the sheet over the opposite edge thereof.

Plastic Bag Sealing and Cutting Machine, R. E. Marsh (to Production, Inc., Chicago, Ill.). U.S. 2,679,280, May 25. A bag-making machine comprising a substantially flat bed provided with a resilient heat-resistant surface, a frame supported over said bag and adapted to be lowered into engagement therewith, a sealing member carried by said frame, said sealing member comprising a thin metal blade having an edge shaped to conform to the desired contour of the bag bottom.

Tablet Counting and Bottling Machine, J. Fradenburgh (to United States Automatic Box Machinery Co., Inc., Roslindale, Mass.). U.S. 2,679,342, May 25. Container filling apparatus for tablets and the like comprising a supporting frame, a hopper for a mass of tablets, a plurality of transversely aligned vertical chutes for single stacks of tablets, intermittent conveyor means receiving tablets from the hopper and advancing rough quantities thereof to the chutes.

Packing Tube, A. Nordeau (to General Mills, Inc., a coporation of Delaware). U.S. 2,679,344, May 25. A packing machine for powdered material comprising a substantially vertical filling tube having an open lower end for insertion into a bag to be filled, the circumference of the tube being substantially smaller than the circumference of the bag and having a bag-positioning projection on one side only.

Mechanism for Metering, Positioning and Inserting Stoppers with Respect to Bottles, T. A. Haynes (to The Upjohn Co., Kalamazoo, Mich.). U.S. 2,679,345, May 25. In a machine for automatically inserting a resilient stopper, having a flat top and a cylindrical shank, into a bottle neck whose inside diameter is less than the normal diameter of said shank, the combination comprising: a vertically and axially reciprocable ram having a concave surface defining a portion of a sphere at the lower end thereof and a suction opening through said surface.

Filling System, R. H. Breeback (to Crown Cork & Seal Co., Inc., Baltimore, Md.). U.S. 2,679,346, May 25. The method of filling a container with liquid comprising maintaining a body of the liquid and a superposed body of gas under pressure in a chamber, maintaining a second body of gas under a higher pressure and initially flowing gas into a container from the second body of gas through momentarily aligned passages of pre-determined size so that the pressure thereby established in the container will not exceed the pressure above the body of the liquid.

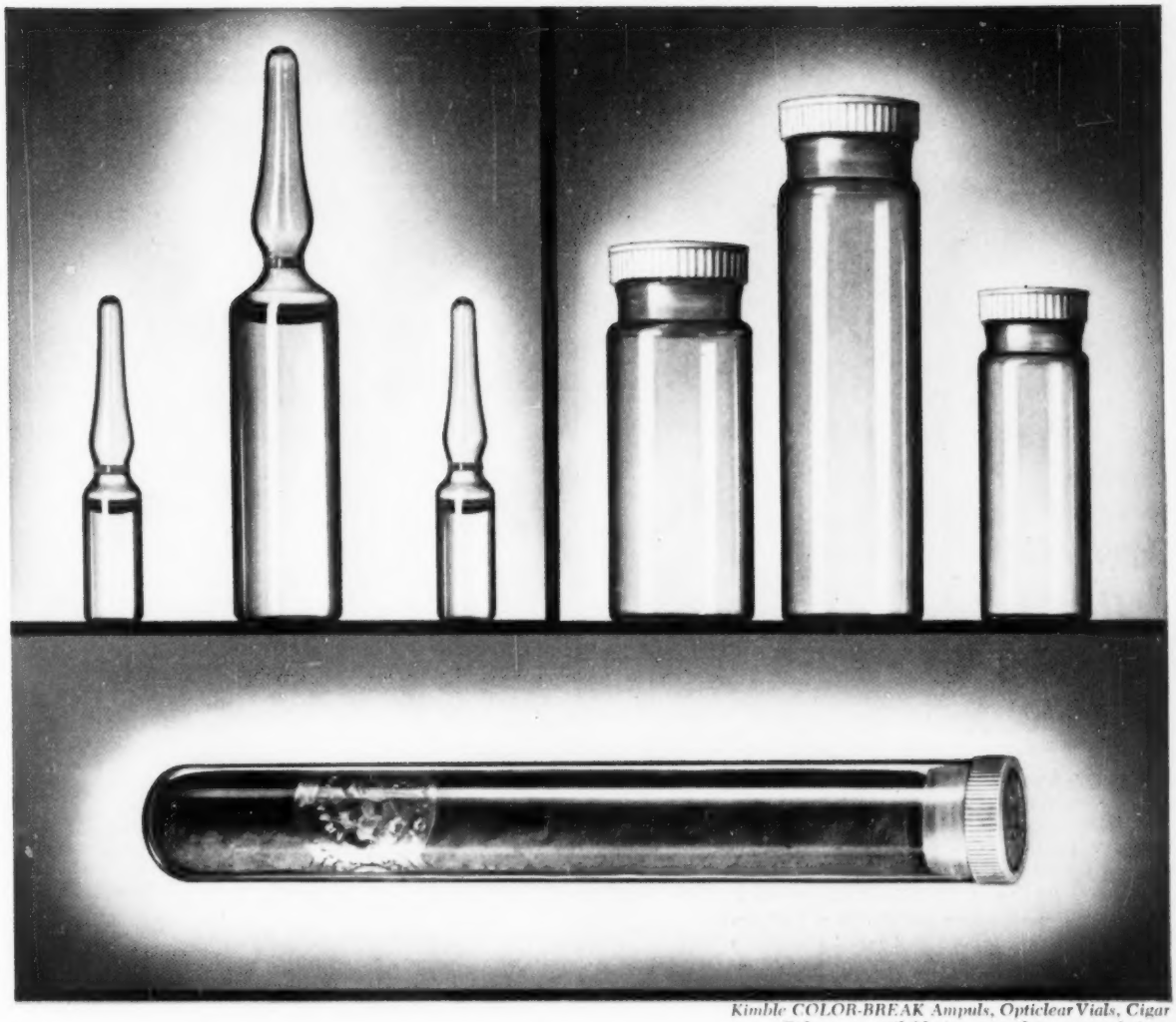
Tear-Strip Package and Blank Therefor, C. D. Mullinix, Los Angeles, Calif. U.S. 2,679,349, May 25. A sealed perforation tear-strip package having side walls and end walls, said package being formed of at least one relatively heavy sheet and at least one relatively light sheet of material having protective characteristics but shearable by finger manipulation, said heavy sheet extending through the area of said side walls.

Article Feeding and Collecting Mechanism, C. E. McKinsey and F. Radon (to General Electric Co., a corporation of New York). U.S. 2,679,962, June 1. Apparatus for loading containers with a pre-determined quantity of individual wire lengths and conveying along a fixed path a succession of the loaded containers, said apparatus comprising means including a chute for sequentially discharging a pre-determined number of the wires into a container positioned beneath the discharge end of the chute.

Rotary Table Machine for Packing Bottles and the Like, M. P. Neal (to A-B-C Packaging Machine Corp., Quincy, Ill.). U.S. 2,679,963, June 1. In a packaging machine, in combination, a frame, a table mechanism supported by said frame, including a plurality of flexible endless belts disposed in parallel arrangement for receiving and supporting bottles on the upper runs thereof.

Printed Package and Method of Manufacturing the Same, F. A. Richter (to Transparent Package Co., Chicago, Ill.). U.S. 2,679,968, June 1. A package formed of two plies of cohering transparent polyvinylidene chloride film, the face-to-face surface of said plies being in intimate contact with each other, one of said plies having printing on that surface which is in intimate contact with a surface of the other ply.

Package Construction, F. A. Richter (to Transparent Package



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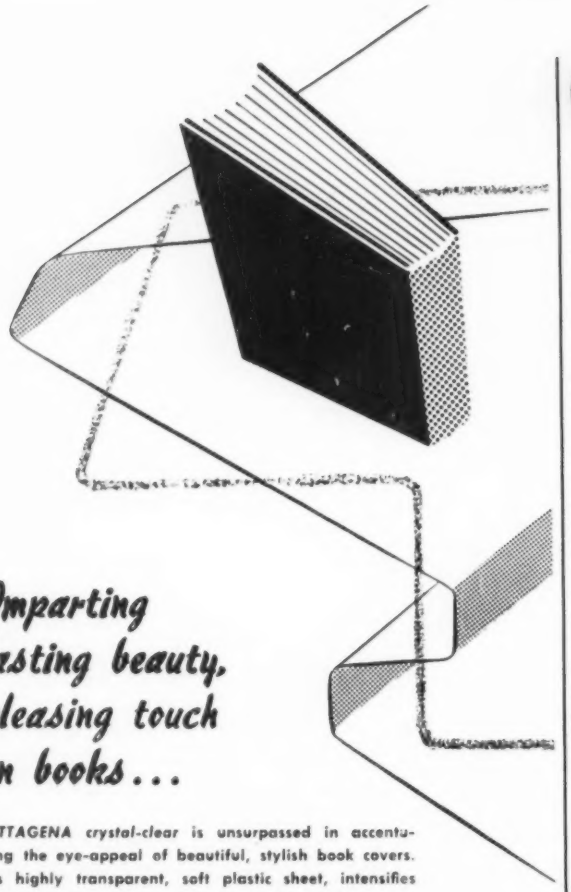

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U.S. patents digest

Co., Chicago, Ill.). U.S. 2,679,969, June 1. A package formed of a laminate comprising a plurality of plies of thin flexible films, each of said plies adhering to an adjoining ply as a result of the inherent attractive forces in the face-to-face surfaces of said adjoining plies, at least two of said plies being composed of different film material.

Label Strip Dispensing Package, J. H. Bishop, Jr., and M. Engle (to Western Lithograph Co., Los Angeles, Calif.). U.S. 2,679,928, June 1. A label device comprising a backing card, a cellulosic foundation sheet superimposed upon and adhered to the top surface of card in covering relationship thereto, a plurality of flexible label strips adhered to said foundation sheet in parallel relationship by permanently tacky adhesive, said strips being disposed transversely of the foundation sheet and each terminating short of a side edge thereof.

Heat-Sealing Machine, R. E. Stanton (to Celanese Corp. of America, New York, N.Y.). U.S. 2,680,470, June 8. Apparatus for heat sealing thin films, comprising a belt, drive means for moving the belt through the apparatus, pressure means for urging the films to be sealed against the face of the belt and heating means for raising the temperature of the belt and the films in contact therewith to the sealing temperature.

Heat and Pressure Sealing Apparatus, L. P. Mercer (to Milprint, Inc., Milwaukee, Wis.). U.S. 2,680,471, June 8. Apparatus for effecting transverse seals at pre-determined portions of multiple-ply ribbons of thermoplastic sheet material, comprising a cylindrical drum, means for longitudinally advancing the ribbons over the arcuate periphery of said drum, a heating element carried by drum and movable with the ribbons for subjecting local portions of one side thereof to heat transversely thereacross through the travel of the ribbons over the drum periphery and means for simultaneously applying resilient pressure to the other side of the ribbons throughout the heating operation.

Cap Structure for Bottles, J. E. Underwood (to The West Co., Phoenixville, Pa.). U.S. 2,680,531, June 8. A cap structure for pharmaceutical bottles comprising a relatively deep outer cap, a resilient sealing member seated within said cap and a retaining member nested within said cap and having an inturned flange at its top to retain said sealing member.

Carton-Filling Mechanism, C. J. Malhiot (to F. B. Redington Co., Chicago, Ill.). U.S. 2,680,545, June 8. In an apparatus for depositing articles in the open upper end of a container, means establishing a filling zone, means for supporting the container beneath said zone, continuously moving means for successively bringing articles to said filling zone and means for engaging simultaneously the opposite sides of said articles brought to said zone while said articles are continuously moving.

Method of Assembling Cans and Covers, S. J. Brosky (to American Can Co., New York, N.Y.). U.S. 2,680,551, June 8. The method of assembling covers on containers wherein a cover is provided with a countersunk panel surrounded by spaced outwardly projecting locking lugs and a container includes a dispensing mouth surrounded by spaced cover lug receiving sections and alternately spaced radially inwardly extending cover locking sections, said locking sections each being defined by a forward-depending hurdle element and a rearward-depending stop element connected by a downwardly inclined tapered locking wall surface.

Carrier for Cylindrical Objects, G. C. Currie (to Dacam Corp., Charlotte, N.C.). U.S. 2,680,556, June 8. A flat-topped carrier for two parallel rows of flat-ended cylindrical objects, said carrier being cut from a single blank of material and comprising a pair of side panels, a first end panel hingedly secured at opposite side edges thereof to the end edges of said side panels, a second end panel hingedly secured at one side edge thereof to one end edge of one side panel, a tab hingedly secured to the other side of second end panel, tab being adhesively secured to the other side panel and being of less width than side panel.

Opening Device for Cartons, G. W. Mai (to Gaylord Container Corp., St. Louis, Mo.). U.S. 2,680,558, June 8. A carton comprising foldably, integrally connected bottom, side and top walls, the top and bottom walls having foldably connected, integral end flaps disposed angularly inwardly in overlapping relation to form carton end walls, the side walls each having foldably, integrally connected end-locking tabs disposed in releasably locked relationship and positioned against the outer

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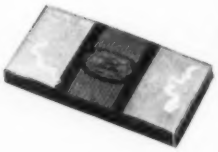

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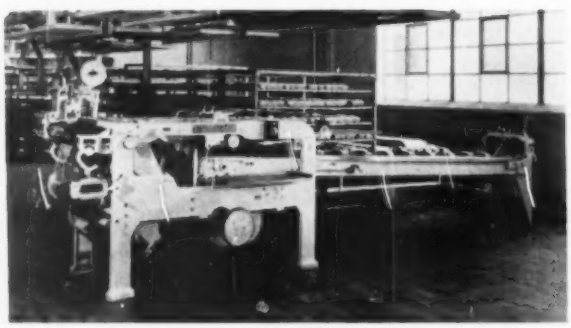

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U.S. patents digest

face of the end flaps, the top wall having an integral sealing flap foldably connected to the front side margin thereof and disposed downwardly.

Article-Packing Device, H. McKinney McLearn (to American Machinery Corp., Fairvilla, Fla.). U.S. 2,680,590, June 8. In a packing device, the combination with an article collector having two discharge passages and means for alternately diverting the discharge of said article from one of said passages to the other, separate weighing units adapted to support containers and positioned to receive articles discharged from each of said passages, respectively, of an electrical motor means having an actuating connection with diverting means for automatically changing the position thereof.

Mechanism for Assembling Cans and Covers, W. P. Belmar (to American Can Co., New York, N.Y.). U.S. 2,680,550, June 8. In a mechanism for assembling can covers having spaced locking lugs thereon with cans having spaced cooperating locking sections thereon, the combination of a chuck having expansible jaws thereon for entrance into a can for holding the can in position to receive a cover.

Dome-Top Carrier Carton, R. Guyer (to Waldorf Paper Products Co., St. Paul, Minn.). U.S. 2,681,143, June 15. A carrier carton including rectangularly arranged side and end walls, a bottom panel foldably connected thereto and a top panel foldably connected to the upper edges of said wall panels, a pair of arcuate fold lines on opposite sides of each of two parallel fold lines connected said top panel to side-wall panels, said arcuate fold lines merging together at opposite corners of the cartons and diverging apart between their ends.

Envelope Containing a Fragile Capsule, S. C. McMillion (to R. P. Scherer Corp., Detroit, Mich.). U.S. 2,681,168, June 15. A container for dispensing a fluid material at a pre-determined location without admixture with foreign material, said container comprising a capsule filled with said fluid material and having walls rupturable at any point thereof by application of manual pressure to said container.

Dispenser for Finely Divided Materials, J. F. Watson (to Western Home Products Co., Allendale, N.J.). U.S. 2,681,169, June 15. In a dispenser for finely divided material, including a container for said material having a discharge aperture in the bottom thereof, hinge means for supporting the upper portion of said container on an upright surface to swing about a substantially horizontal axis.

Discharge Controlling and Sealing Means for Collapsible Tubes, W. H. Elliot, Whitefish Bay, Wis. U.S. 2,681,170, June 15. As an article of manufacture, an assembly comprising a body having upper and lower chambers of different dimensions and an interfitting piston with an operating stem, said body having means for detachable connection thereof to the discharge portion of a collapsible container to be carried by the container.

Box Loading and Conveying Machine, C. K. Brown and G. C. Smith (to Robert E. Johnson, Charleston, W. Va.). U.S. 2,681,171, June 15. A machine for the packaging of containers into boxes comprising in combination, a framework, a conveyor mount on said framework, a table on the framework arranged to receive a series of containers deliverable thereto from conveyor, a receiving plate on the table to receive the containers and a dump shelf aligned on the same plane with said receiving plate.

Container, R. S. Sanford (to The Autoyre Co., Inc., Oakville, Conn.). U.S. 2,681,172, June 15. A container formed from sheet material comprising a bottom wall, a plurality of spaced tab members struck from a central area of said bottom wall to form each of a pair of side walls for container and to form a plurality of apertures in bottom wall terminating adjacent each of said walls and connecting lower ends of tab members for integrally connecting and reinforcing bottom.

Tray Structure, R. Guyer (to Waldorf Paper Products Co., St. Paul, Minn.). U.S. 2,681,173, June 15. A tray in flat form formed of sheet material of substantially uniform thickness, including a bottom panel, side-wall panels foldably connected to opposite edges of bottom panel and folded onto bottom panel, reinforcing flaps secure in surface contact with side-wall panels and connecting flaps foldably connected to opposite ends of each side-wall panel and arranged in overlapping relation.

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- Unit Pack Cans
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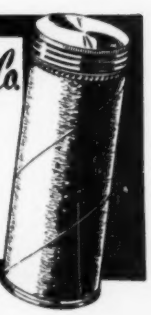
Call Cleveland!

Write . . . the Cleveland Container plant nearest you for our new Packaging Folder.



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Current pre-packaging trends

Finding the solution to the appropriate materials for pre-packaging appears to be the answer to a virtual complete "swing" to pre-packaging of fresh fruits and vegetables, according to the current Summer issue of the U. S. Dept. of Commerce *Containers and Packaging Industry Report*. For container and packaging-material manufacturers, it is pointed out, a vast profitable marketing potential is present for those who "take the time and energy to work at it."

This and other revealing facts were brought out by a survey of packers, wholesalers, distributors and retailers, conducted by 16 of the Commerce Department's field offices.

Mentioned as factors that will influence the future growth of pre-packaging are: consumer education and advertising through use of private brand names, continuation of the swing to self-service food merchandising, more economical pre-packaging methods resulting perhaps from an expansion of specialized high-speed pre-packaging operations, improvement in standardizing or grading produce to insure consumer satisfaction, development of packaging materials to overcome technical problems which are currently confronting the trade and the correct utilization of available packaging materials and supplies.

The enthusiastic and volume acceptance by consumers of pre-packaged fresh fruits and vegetables promises to alter significantly the current system or pattern of produce merchandising.

Following is a composite list of all fruits and vegetables which were reported as being pre-packaged for consumer sale:

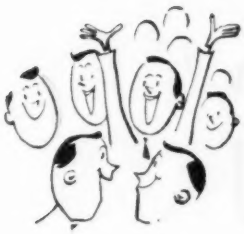
Apples	Green beans
Apricots	Kale
Asparagus	Lemons
Bananas	Lettuce, shredded
Beets	Lima beans, shelled
Blueberries	Limes
Broccoli	Mushrooms
Brussel sprouts	Mustard greens
Cabbage	Onions, dry
Carrots	Oranges
Cauliflower	Peas, shelled
Celery	Plums
Cherries	Potatoes
Cloves	Potatoes, peeled
Collards	Radishes
Corn	Salad, tossed
Cranberries	Spinach
Endive	Squash, diced
Garlic	Strawberries
Grapefruit	Tomatoes

Table I herewith shows the relationship of selected maior produce items pre-packed in 1952 in compari-

TABLE I—ESTIMATED VOLUME OF SELECTED MAJOR PRODUCE ITEMS PRE-PACKAGED, UNITED STATES, 1952*

Item	*Approximate fresh consumption (Million lbs.)*	*Packaged (Million lbs.)*	*Packaged (per cent)*
Asparagus	208.0	3.0	1.4
Broccoli	30.4	2.0	6.6
Cauliflower	438.0	2.0	.5
Sweet corn	750.0	12.0	1.6
Kale	12.0	10.0	83.3
Onions	1,800.0	100.0	5.5
Potatoes	16,700.0	1,000.0	5.9
Spinach	273.7	200.0	73.1
Tomatoes	1,713.0	1,000.0	58.4
Mushrooms	30.0	17.0	56.7
Carrots	1,500.0	500.0	33.3
Celery	1,230.0	150.0	12.2
Lettuce	2,075.0	50.0	2.4
Salad mix		50.0	100.0
Cole slaw		50.0	100.0
Apples	3,677.0	100.0	2.7
Cherries	72.0	2.0	2.8
Cranberries	75.0	45.0	60.0
Lemons	600.0	25.0	4.2
Limes	13.6	5.0	36.8
Oranges	3,400.0	900.0	26.5
Plums	150.0	1.0	.7

* Source: Produce packer.



More

and

More

and

More

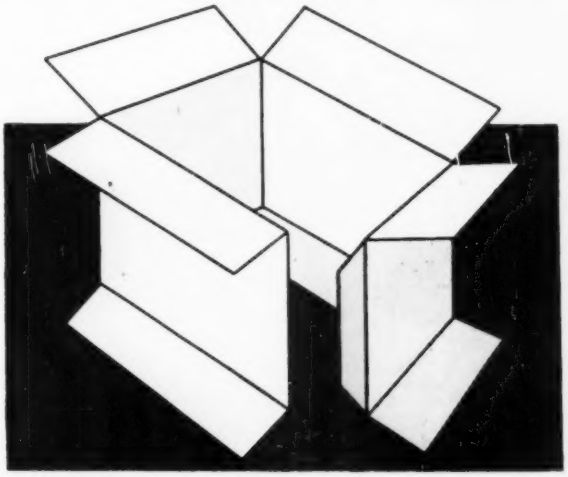
packers want **GLUE-LAP BOXES**

made with **DAREX** resin adhesives

Now that field experience has clearly proved the advantages of glue-lap boxes for many applications, packers are demanding them in ever-increasing quantities.

The key factor to *your* sales and profits in the glue-lap field is the right resin adhesive. That's why most leading box manufacturers use DAREX Resins, produced in a complete range of formulations for all types of glue-lap machines.

DAREX Resin sales engineers pioneered the glue-lap process with the men who designed the machines. Consequently, your nearby DAREX representative is in a good position to save you a lot of costly experimenting. He knows box-making; he knows adhesives. Call him in *now* for the complete information you *need* for glue-lap boxes made with DAREX Resin Adhesives!



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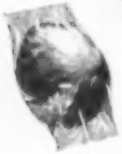

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son with the 1952 total consumption.

To date, it is reported, retailers are numerically, and by volume, the largest pre-packers of produce. However, the primary function of pre-packaging now, with increasing volume, appears to be shifting away from the retailers and centering at or near the point of shipment. Volume pre-packaging, for example, has created a specialized pre-packaging operator in the produce merchandising system. Although reports indicate that present operations of both the specialized pre-packer and grower-packer are comparatively small, the primary responsibility of pre-packaging appears to be in their direction, with a corresponding reduction at the retail level.

Predictions of the survey respondents of what is to come in pre-packaging were optimistic, one packer stating that he expects within the next two years 90% of all produce for the fresh market will be pre-packaged.

Cushioning nomogram

(This article continued from page 130)

Messrs. T. P. Wharton, A. C. Beardsell and G. S. Mustin of Container Laboratories, Inc., for their encouragement and assistance in this work.

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Constance Bannister Photo

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PLASTIC ARTISANS, INC. 70 Westchester Ave., White Plains, N. Y.

Crushproof cookies

(This article continued from page 109)

of the cookies removed, those remaining in the package receive continued protection. And when the package is lifted and carried by the labeled end, its weight is distributed in such a manner that very little strain is placed on the transparent wrapper.

The flat blanks may be formed into compartments either automatically or by means of a manually actuated forming device, depending upon production requirements. With the hand-forming units, which require one operator, the blanks can be set up at a rate of 1,500 or more units per hour; production with the automatic type of forming machine, which requires only occasional operator attention, attains a production rate of 60 set-up blanks per minute, or 3,600 per hour. Both the manual and automatic set-up units fold the die-cut separators into vertical position and lock the anchoring tabs in place.

In the Sawyer plant, set-up compartments move via conveyor to packers stationed on the multiple production lines. As finished cookies are delivered to these operators by conveyor, they pick up the proper number of cookies and place them in the compartments. The set-up blanks move in a channel whose sides prevent cookies in the outer pockets from escaping. In the next phase of the packaging operation, the packed trays are placed in pre-fabricated cellophane bags which have been slipped over a tapered chute. Operators handling this operation then slip a saddle-type thermoplastic label over the open end of the bag and pass it through a heat-sealing unit which makes the final closure and simultaneously code dates the label. This sequence of operations is shown in an accompanying series of photos.

The new Sawyer cookie packages gain excellent shelf identity through the use of printing directly on the cellophane bag as well as on the heat-sealed label. The latter, printed in bright red and green, highlights the Sawyer name and specific product name on the front panel, supplemented by a price patch of generous size for convenient pricing. Information on the back panel of the label includes the product count, list of ingredients, and company name and address, together with a line draw-

ing, in red, of the Sawyer Town House cracker package. This is accompanied by the slogan, "Just Right for Two Bites," used in connection with that product.

Combining, as it does, maximum display effectiveness and superior product protection, this same type of package construction appears to be ideally suited to various other types of products, such as candy, brown-and-serve rolls, etc., which depend heavily upon impulse purchases and yet must be shielded against crushing or other damage if they are to remain salable. Depending upon the size of the product involved and the count desired, the compartmented trays can be tailored to almost any need. The forming equipment, manual or automatic, is readily adjustable to handle a wide range of blank sizes through easily made changes in the forming die.

CREDITS: *"Autonest" package compartments and equipment for forming units manually or automatically by Chicago Carton Co., 4200 S. Crawford Ave., Chicago 32. Printed cellophane bags by Milprint, Inc., 4200 N. Holton St., Milwaukee 1, Wis.; Shellmar-Betner Flexible Packaging Div., Continental Can Co., 100 E. 42 St., New York, and The Dobeckmun Co., 3301 Monroe Ave., Cleveland 13 Ohio, "Mercury" heat-sealing machines for closing bags and applying labels by Paul L. Karstrom Co., 1874 W. 74 St., Chicago. Thermoplastic labels by Acro Label Co., 554 W. Adams St., Chicago.*

Tinfree-can prospects

Tinless cans of the future are expected to come from a number of metals now under investigation and available on this continent, according to a paper presented at the recent annual meeting of the Institute of Food Technologists by R. H. Lueck, K. W. Brighton and R. W. Pilcher of American Can Co.'s research and technical department. These metals include untinned steel, specially treated steel, aluminum, and steel coated with aluminum, zinc and possibly nickel. Untinned steel was reported as a leading candidate to replace tinplate. However, it must be enamelled on both sides to prevent corrosion. Investigations into chemically treated steel are also said to be encouraging, although price is a factor. Possible use of aluminum is said to depend on its physical and chemical properties and on price.

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SCIENTIFIC FILTER CO.
56 Rose St., New York 38, N. Y.

Can-carrier cartoning

(*This article continued from page 105*)
operation to turn the carton gently and to avoid damage to the score lines. The single stream of cartons, traveling end to end, is divided into two streams by means of diverter wheels. One lane of cartons moves into the case packer without change or elevation, while the other lane moves up an inclined belt and is guided over the bottom lane.

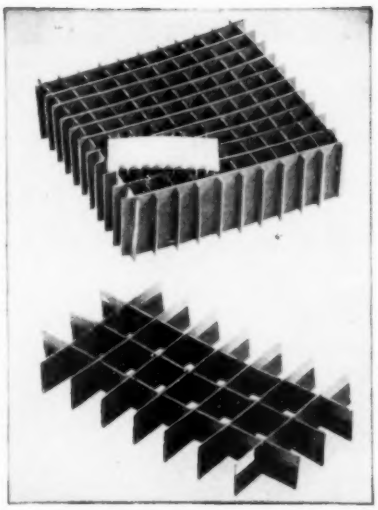
In the case of the six-pack, groups of four cartons (two on top of two) move into the loading position. The first stroke of the loading arm deposits four cartons in the funnel, the pusher arm making the half stroke. As the next group of four (two on top of two) is pushed toward the shipping case, the loading arms complete a full stroke, moving the entire load into the shipping case. The operator has a complete cycle in which to drop the loaded case, push an empty case over the loading funnel and trip the machine for the next cycle.

The 12-packs are loaded similarly, except that on the infeed belts the cartons are first turned to stand on end, then move in a single stream into loading positions. Two cartons of 12 cans standing on end, side by side, are the same dimension as four cartons of six cans arranged two on top of two, end to end.

The case packer is equipped with 15 ft. or more of infeed conveyor. At the Heileman plant it is arranged "in line" with the cartoner, but it may be set at right angles to the cartoner or in a U-shaped set-up with respect to the cartoning machine, as floor space permits.

CREDITS: *Cartoner and case-loading equipment developed and manufactured by R. A. Jones & Co., Inc., Cincinnati 1, Ohio. End-opening carry cartons by Gaylord Container Corp., 111 N. Fourth St., St. Louis, Mo. Corrugated shipping cases by Inland Container Corp., 700 W. Morris St., Indianapolis 6. "Hytafill" X-ray can inspector by General Electric Co., River Rd., Schenectady, N. Y. "Cemco" can filler by Crown Cork & Seal Co., Inc., Eastern Ave. & Kresson St., Baltimore 3, Md.*

CORRECTION: In the article "Pie for a Dime" in the July issue, the cost of cellophane, glue and ink used in the tray-top sheet was incorrectly given as 6 cents per thousand. The correct figure is 60 cents.



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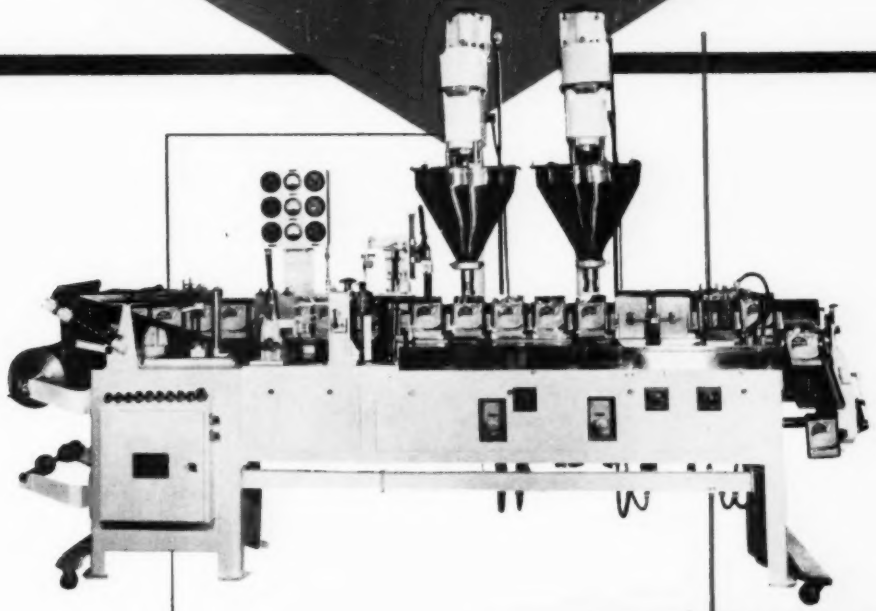

To meet the terrific consumer demand for 7 Minute Frosting, the 6 O'clock Food Company uses high speed automatic Bartelt Machines to form the envelope, fill, and seal their product in a colorful, attractive foil package. The Bartelt basic machine is perfectly suited to meet these rigid requirements. The new Bartelt Fillers mounted on the base machine proved to be superior for handling the Frosting in powder form.

Bartelt can help you with your packaging problems. In addition to the basic machine and to their new filler, Bartelt can furnish cartoning equipment to be added to their base machine. Write for assistance with your packaging problems today.

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Regardless of size or shape, you get a neat, tight wrap on every package with a Hayssen automatic wrapping machine. *Wrapping's easier!* Also, production men report savings up to 80% over previous wrapping costs.

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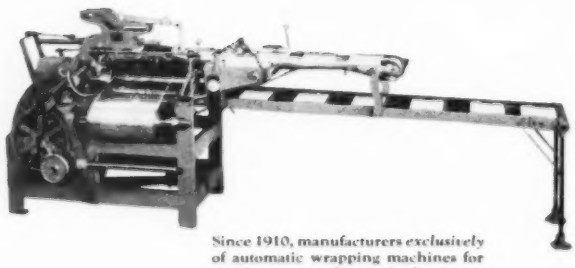
No complicated adjustments from size-to-size on a Hayssen. No gears or sprockets to remove or change . . . no need for expensive mechanics to change size, either. So simple the operator does it on the job.

more sturdily built

Hayssen's simple, rugged design, using fewer moving parts, keeps these machines working and saving through years of dependable, trouble-free service. Every moving part is in the open and easily reached for maintenance and cleaning.



Since 1910, manufacturers exclusively of automatic wrapping machines for textiles, paper, frozen foods, meats, vegetables, and many other products. Whatever your product, Hayssen can solve your wrapping problem. WRITE today for more information.

Hayssen MFG. COMPANY
Dept. MP-8, SHEBOYGAN, WISCONSIN

Shock test for films

(This article continued from page 123)

3. Polycel A-25, 4 by 2 by 12 back sealed on tuber by heat: two failed at 4 ft. on back seal; three good to more than 6 ft.

4. Pliofilm H.P., gauge 120, 4 by 2 by 12 bags hand made on impulse sealer: all five failed at 3 ft., three failing on front face and two on back seal.

5. Cellophane 300 MST–51, 3.5 by 2.25 by 9.75 bags, machine-made glue seal: two failed at 5 ft. on front face; three good to more than 6 ft.

Conclusions

Although this test is empirical and somewhat crude, its use has already established some salient points in the film industry.

1. Orientation of extruded polyethylene film must be very carefully controlled at the point of extrusion to obtain good shock resistance.

2. Pressures and temperatures at the time folds are placed in extruded polyethylene tubing must be very carefully controlled.

3. From the standpoint of shock resistance, it is not always advisable to print polyethylene all the way around the gussets even if a customer is desirous of hiding some of his merchandise.

4. Although claims may be made to the contrary, some types of treatment to make polyethylene receptive to printing tend to degrade the shock resistance of the polyethylene plastic film somewhat.

5. It is quite possible for a converter to complain about poor-quality film being received from an extruder of plastic film when in reality the converter himself has degraded the quality of the film in some of his own converting operations.

6. It is highly desirable that refinements and improved quality controls be established in the manufacture of polyethylene flake and resin as rapidly as sufficient knowledge accumulates to do so.

With proper analysis and discernment, the sand drop shock test can be made to do useful work for the converter, for the extruder, as well as for the manufacturer of plastic resins for films.

Care must be exercised in interpretation of results, so that the true point of origin of trouble may be properly located.

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You can boost ice cream and sherbet sales with STYRON CONTAINERS

Even old favorites are more tempting in crystal-clear Styron packages

Don't hide your ice cream and sherbet in old-fashioned containers . . . make the most of their natural appetite appeal in sparkling, transparent Styron® plastic containers!

These lightweight, durable containers made of Styron have proved a terrific stimulus to ice cream merchandising and sales. They're designed and engineered specifically to meet all the packaging requirements of the ice cream industry . . . and to give your customers a container that is easier to handle, easier to store. Your ice cream is completely protected all the way from your plant to the consumer. Moreover, they're evaluated by The Dow Product Evaluation Committee . . . your assurance that they're tops for material, design and workmanship.

Let Dow put you in touch with molders who can help you package your ice cream for a new high in sales! THE DOW CHEMICAL COMPANY, Midland, Michigan.

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN, PLASTICS SALES, PL 459U

Please send me your latest catalog featuring STYRON PACKAGING.

Name _____ Company _____ Street _____

City _____ State _____ Product to be packaged _____

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CASE SEALERS
"Packergluer"
Semi-Automatic

CASE SEALERS
"Model D"
Fully Automatic

CASE OPENERS
End open or top
and bottom cases

CARTON SEALERS
Auto feed, filler, and
compression unit,
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FILLERS
Low or high speed,
ounces to pounds

AUGER FILLERS
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and turret type

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For the finest, most efficient case opening, sealing and loading equipment . . .
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For top quality engineering design and the tried and proven skill of over thirty years of expert craftsmanship . . .
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For safe, uniform, proper packaging . . .
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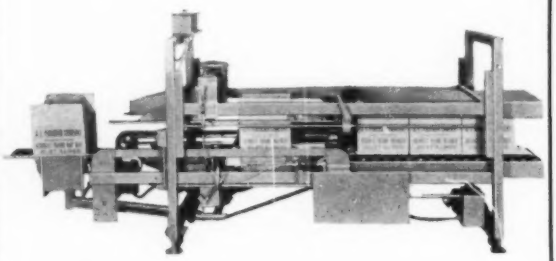

NEW PACKOMATIC SHORT CASE SEALER . . .

applies glue in spots at ¾" center for fast extra tight closure. This rapid-fire machine occupies less than 30 square feet, saving valuable space. Easy maintenance and few moving parts cut down on additional costs.

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Single-portion packs

(*This article continued from page 84*)

packets, consisting of an acetate-Pliofilm-foil laminate, provide lasting protection against moisture pick-up by the product, which is highly hygroscopic, and are easily torn open by the user when he wishes to empty the contents into a cup of tea or a cup of coffee.

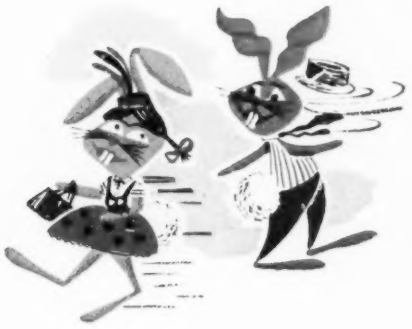
One of the most ingenious combination uses made to date of single-portion packages is the Café Pak, developed by Café Pak, Inc., of Atlanta, Ga. Sold principally to motor courts, the unit consists of a paper "hot cup" with inner sealing lid and an outer lid formed of transparent cellulose acetate sheet. Within the shallow compartment between the two lids are single-service sealed packets of G. Washington's Instant Coffee, Pream and Domino cane sugar. The user has only to empty the ingredients into the container and fill the cup with hot tap water for an immediate and satisfying "eye-opener" cup of coffee.

This interesting combination package solves a real problem for motor courts, since the cups may be left in the guest rooms and no special equipment or service are needed. The Café Pak has also found its way into other avenues of distribution. Several large companies have purchased the units for use in company-owned airplanes and a number of business firms have found Café Pak the ideal solution to the office "coffee break."

According to C. L. Huxford, president of Café Pak, this combination package has also enjoyed increasing use for picnicking, hunting and fishing trips, etc. On the basis of the user interest in this unit, the company is introducing this summer a retail package consisting of five complete Café Paks in a polyethylene bag. These will be distributed through supermarkets and other retail outlets.

The examples cited in this article, while by no means covering all the food products now being packed in single-portion packages, indicate the growing importance of this trend and suggest its impact on packaging materials and equipment. Manufacturers of many types of food items are watching these developments closely and it seems reasonable to predict that numerous other foods will appear in some form of single-portion package as their sales potential becomes more widely appreciated.

IMPULSE APPEAL



Vibrant color . . . the sensory appeal of warm lightness . . . the promise of convenience . . .
THAT'S THE PLAXPAK® BOTTLE.

PLAX

USE APPEAL

The infinite ease of a one-hand squeeze . . .
the perfect safety of unbreakability . . .
THAT'S THE PLAXPAK BOTTLE.

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REPEAT APPEAL

A magnet at the point-of-purchase . . . an aid to your product at the point-of-use . . . it sells, then resells . . .
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The Plaxpak polyethylene bottle is packed with merchandising magic. And Plax alone has the experience to exploit this magic to its fullest in behalf of your product. Our packaging staff is at your service —
For packaging that sells at the point-of-sale and resells at the point-of-use.

PLAX CORPORATION

PLAX

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MANUFACTURERS' LITERATURE PAGE?

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—A BRESKIN PUBLICATION—

575 MADISON AVENUE NEW YORK 22, N. Y.

Romney to AMA post

W. L. Romney, technical director of packaging for The Procter & Gamble Co., has been elected vice president in charge of the Packaging Division of the American Management Assn.

The association elected three other new divisional vice presidents and 11 directors at a business meeting held in conjunction with its general management conference, held recently in New York.

Mr. Romney

Other newly elected vice presidents of AMA's operating divisions are: Frederick G. Atkinson of R. H. Macy & Co., Inc., personnel division; Herman Knauss of Mutual Life Insurance Co. of New York, office management division; and Gordon G. Hoit of Stromberg-Carlson Co., vice president of the office management division.

Vice presidents re-elected for a second one-year term include Wayne J. Hollman, Jr., of Chicopee Mills, Inc.; J. Keith Louden of York Corp.; A. S. Stambaugh of Standard Oil Co. (Ohio) and Henry Anderson of American Broadcasting-Paramount Theatres.

Drugs

(*This article continued from page 99*)

nomics and consumer preference that only future shopping habits will determine.

The important point for the packager of proprietary drugs to realize is that self service and self selection of drugs, with all that that implies in the packaging, are here to stay and anyone who wishes to sell products in those markets must design packages in a way that will meet those requirements.

Whether a shopper chooses one remedy in preference to another depends more than ever on the impression the package makes and the story it tells.

Old-fashioned, stodgy design techniques will not attract the customer. That is why there is a flurry of redesign to obtain the bolder effects that make each drug product stand out in mass display among the hundreds competing on today's drug counters. If a well-advertised trade name is the

important feature, such as "Anacin" or "Bufferin," then the package must be designed to show that name clearly and quickly at the point of sale, or the huge sums of money which are being spent for advertising the product are going in vain.

A quick check of popular remedies on any self-service drug shelf today will indicate the design changes that are taking place in some lines—and the need for it in others. Trade names are in stronger lettering. Colors and contrasts are being brightened for better visibility. Designs are being simplified to eliminate the clutter that hampers instant identification of a product's brand name.

Some products have gone through a whole series of changes within the last few years in an effort to get the best possible shelf attention to attract consumers at point of sale.

The problem is less difficult for products that come in large packages, where the face of the package lends itself to effective mass display. Smaller packages, however, such as tubes of ointment, antacid tablets, aspirin, etc., suffer unless they can be dramatized in some manner to get the desired attention.

In many cases these products are given emphasis by the use of colorful counter displays or fixtures that focus attention on the product name and suggested uses.

This technique is being used by some of the ethical houses, which today offer certain over-the-counter items, but retain the same family design for all.

Good examples are the various interesting units introduced from time to time for Squibb products. This company believes there is a definite sales advantage in continuing the familiar brown-and-buff label design for all products, but is using colorful counter-display material. An interesting example is the current summer display unit for Squibb's new Sweeta, a dietary liquid sweetening agent. The polyethylene dispenser bottle, which carries the familiar ethical-looking Squibb label, is being shown attached to a counter card depicting full-sized illustrations of glasses of iced tea and iced coffee, suggesting the use of this non-caloric liquid sweetener to build volume drug-store sales during the summer months.

There are many opportunities for seasonal promotions of both new and old remedies that will help the druggist to sell by dramatizing the package at the point of sale, such as sunburn preparations, poison ivy and insect-bite ointments, first-aid kits during the summer, cold and cough remedies during the fall and winter months, etc.

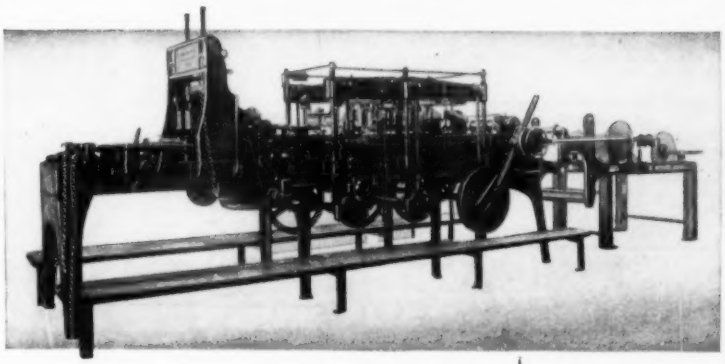
The current birth rate of 4,000,000 new babies per year offers many new opportunities for packaged medicines in the infant and child-under-five age groups. How this turn in vital statistics is affecting drug packaging is indicated by the careful redesigning that is being done by Johnson & Johnson and the Mennen Co. to attract young mothers to their brands.

In fact, the continued upward trend in population, it is believed, constitutes one of the biggest market potentials for the continued growth of the drug industry. Profits, of course, will depend on research for developing and packaging new and better products.

And with this progress no product can be better than the package that protects it. Few packagers have a greater responsibility than those who strive for perfection in the gleaming laboratories of the drug and pharmaceutical industry.

It's adjustable . . . it's automatic . . .

INMAN
TRAY MACHINE
FOR SET-UP
BOXES



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pulley speed	120 R.P.M.
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Designed, built, and guaranteed by Inman, manufacturer of fine boxmaking machines for over seventy-five years.

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Full details on request

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FOR SALE—BY USER: 4—Stokeswrap Packetting Machines, Model B, Auger Type and Volummetric, Pillow style and Four Seal, Electric Eye. 4—Pneumatic Scale Cartoning Lines, Medium Speed, most recent type complete in every detail. Compression two scale weighers. Regular type two scale weighers or plunger types. Can also supply 2 lines equipped with Bottom Tuckers instead of Bottom Sealers. All equipment is now operating and is offered on a guaranteed basis adapted to the user's specific needs. Box 823, Modern Packaging.

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Attn: Howard J. Samuels

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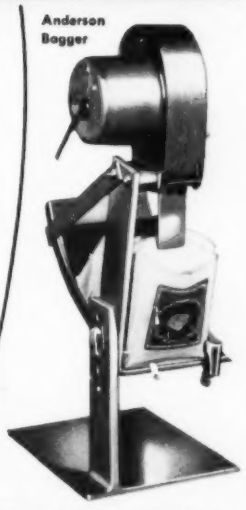
Just send samples of your bags and ask for Bulletin 8-29

Anderson Bagger



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wrap it in seconds . . . no need for oil or grease coatings

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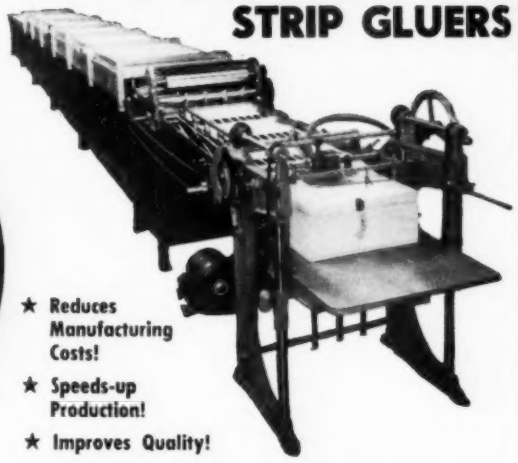

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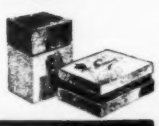

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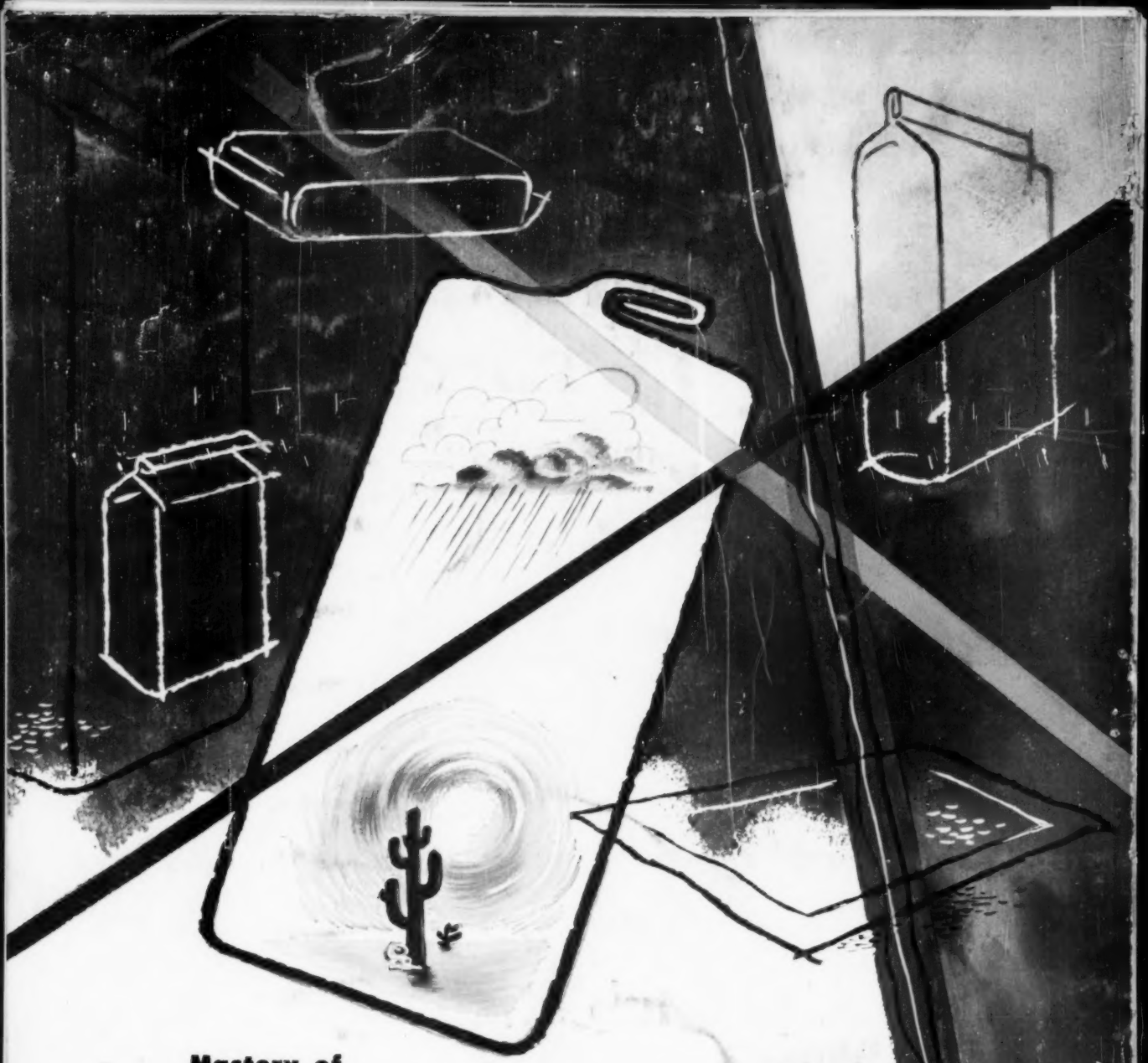

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